The Eleventh Annual Observance of the National Pharmacy Week Movement Will Be Held during the Week of October 21st, This Year, Instead of during the Week of October 14th, in Order to Grant Colleges of Pharmacy Additional Time in Which to Prepare for This Notable Event.

Vol. XXIV, No. 8 AUGUST, 1935

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JOURNAL
OF THE
AMERICAN PHARMACEUTICAL ASSOCIATION

TRADE MARK

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THE 84th ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN DALLAS, TEXAS, 1936.

The 1936 Meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, Conference of Pharmaceutical Association Secretaries, of the Pharmaceutical Law Enforcement Officials and the Plant Science Seminar will also be held in Dallas, Texas.

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This application with the first year's payment of $5.00 may be sent to the Chairman of the Membership Committee, the Secretary or any officer of the A. Ph. A.

E. F. KELLY, Secretary,
2215 Constitution Ave.,
Washington, D. C.

LUDWIG WINKLER.

Ludwig Winkler, president of the Society for the History of Pharmacy since its organization, died at his home near Innsbruck, July 8, 1935, aged 62 years. He was born January 12, 1873, descendent of the Apotheker family, dating pharmaceutical ancestry for more than 350 years and of the Apotheke in Innsbruck. Herein are furnishings of the 18th century and many of the old prescriptions of the pharmacy were modernized by the deceased. When Austria, in 1923, made history of pharmacy a requirement of the course Ludwig Winkler was named for the subject at the University of Innsbruck and at Innsbruck the Society for the History of Pharmacy was founded in 1926. In this work as well as in other research Dr. Winkler devoted studies, time, labor, and liberally of his means. He contributed largely to the Library of the University of Berlin; to this institution he gave photostat copies of the original manuscripts of Haydn's Opera "Der Apotheker;[1]" no effort was too great whenever it was possible for him to aid in the study of pharmaceutical history and this applies particularly to his contributions to the Society for the History of Pharmacy.

LUDWIG WINKLER.

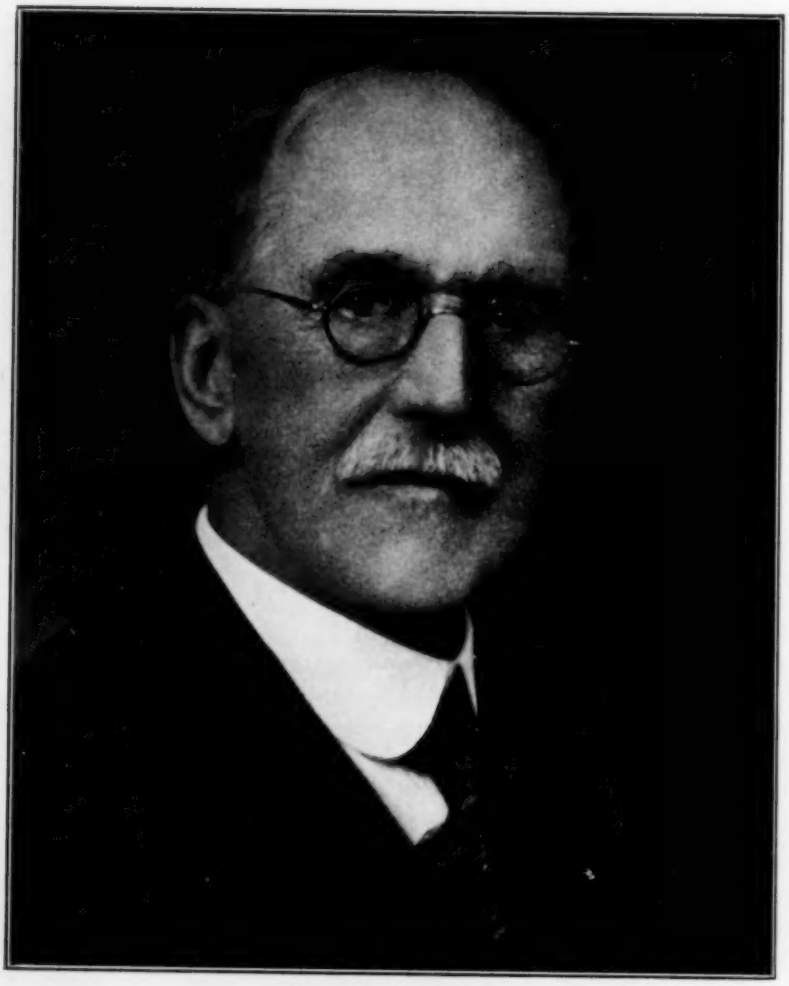
Dr. Alexander Tschirch in a greeting on the sixtieth birthday of Ludwig Winkler said that pharmacy would ever be grateful for the work in connection with the Society. Seldom has a thought taken root with such rich results. In this connection, as a memorial to the pharmacist and historian, Ludwig's memory should be commemorated in the American Institute of Pharmacy. His home university created him an honor citizen and he received the gold honor ring of the German Museum at Munich.

On account of health conditions he did not attend the later meetings of the Society; the Apotheke which he had conducted with honor to himself, his antecedents and pharmacy was passed into the hands of his oldest son in 1933.

The *Pharmazeutische Zeitung* closes a sketch with words expressive of that "what Ludwig Winkler received from his ancestors, he deepened, clarified and enriched for those who follow. A worker died, his works live on." Quoting the original—"*Was er von den Ahnen empfing, hat er vertieft, geklaert und bereichert an die Nachwelt weitergegeben. Ein Wirkender starb, das werk bleibt lebendig.*"

---

[1] "Der Apotheker" was produced in 1768. "The Doctor and the Apothecary" was written in 1762 by Haydn's friend, Dittersdorf, who gave the former violin lessons. Some of Haydn's works were burned when Prince Esterhazy's private theater was destroyed by fire in 1779.



H. A. ESTABROOK.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XXIV AUGUST, 1935 No. 8

HENRY A. ESTABROOK.

Henry Arthur Estabrook is concluding his 50th year of membership in the AMERICAN PHARMACEUTICAL ASSOCIATION. He was born in Ashby, Mass., April 22, 1850, and the 85th anniversary of his birth was made the occasion of a celebration by the members of the Massachusetts House of Representatives of which he has been a member for 12 years. Addresses and presentations were made and the veteran responded in a happy vein. He is House Chairman of the committee on education.

The subject of this brief sketch comes of Revolutionary stock—his father was a direct descendant of Rev. Joseph Estabrook, known in prerevolutionary times as the sage of Concord; his mother was a direct descendant of James Hayward, one of the three Colonials killed at Concord by "the shots heard around the world."

Mr. Estabrook came to Fitchburg from Salem in 1881 and purchased the Derby drug store and continued in the business until 1921 when it was incorporated under the name of Estabrook-Green Co., Inc., of which he was president until he joined the pharmaceutical staff of Brooks Pharmacy, Inc.; later, he established a surgical appliance business.

Mr. Estabrook was a member of the first state board of pharmacy of Massachusetts and he is an honorary member of the New England Board of Registration. He has been a trustee and director of Massachusetts College of Pharmacy for many years and has been honored by that institution with a pharmacy degree, and he has always taken a deep interest in local and state pharmaceutical associations.

Our veteran member takes an active part in church and civic affairs; for several years he was parish clerk and treasurer, and director of the Y. M. C. A., Fitchburg, and holds membership in Masonic and other fraternal organizations. He was a member of the School Committee of the city for many years, a director of the Merchants Association and the Board of Trade, a trustee of the Worcester North Savings Institution, of the Fitchburg Rifle and Gun Club, Massachussetts Fish and Game Protective Association, of which he was elected an honorary life member.

EDITORIAL

E. G. EBERLE, EDITOR 2215 Constitution Ave., WASHINGTON, D. C.

THE PORTLAND MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

THE 83rd annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION has become part of its history. The attendance was larger than anticipated by those who had given consideration to the prospects, fearful that distance from more central points would prevent many from going to the convention this year. The hosts were enthusiastic in their appreciation of the selection for the 1935 meeting expressed by a very interesting and enjoyable program. The hospitalities of Oregon and sister states made the visitors aware of the genuineness and sincerity of the welcome accorded them.

The Local Secretary and the co-workers entered early into the determination to make a success of the Portland meeting and the spirit resulted in arrangements which marked the annual event and the convention programs. There was evident a leadership and a desire that the workers of the ASSOCIATION and the related organizations should realize that the hosts had service as an outstanding purpose and were delighted to entertain the visitors. In this they eminently succeeded and only words of praise were heard; the press published excellent reports of the meeting and the hotel made the visitors feel at home; the meeting rooms were all on one floor, so that members had no difficulty in locating the sessions and, when necessary, to expeditiously render their reports at the meetings of the several sections and conferences.

The Tri-State meeting of the Associations of Oregon, Washington and Idaho held on Monday and Tuesday was an unusual feature and added greatly to the attendance and interest. This joint meeting brought the pharmacists of the Pacific Northwest into closer touch with the A. PH. A. and set a precedent which might well be followed in many sections.

At this late day it is impossible to detail the transactions, and members are referred to the addresses of presiding officers, sessions of the Council and report of the Committee on Resolutions, which, it is hoped, can be included in this number of the JOURNAL. The addresses speak for the activities of the respective bodies and the reports of part of the transactions. The conclusions reached on some of the important matters and other details will have to be deferred to succeeding issues, when the minutes of the General Sessions, House of Delegates, Sections of the ASSOCIATION and related bodies are printed. A general statement will apply that this meeting was eminently successful, and there was evident a desire to coördinate and coöperate to the end that pharmacy may progress, and that those engaged may look to leadership and direction from the associations charged with duties to improve conditions by sane and fair methods of business and professional conduct. Progressive steps have been taken and it may be said that the meetings of the state associations were mutually helpful; the outcome of some of these discussions will find further expression by national and state associations.

The award of the Ebert Prize to Marvin J. Andrews shows that the careful studies in prescription practice have awakened thought relative to the great im-

portance of this service. The founder of the Prize, Albert E. Ebert, was a practicing pharmacist during his life.

Certificates of appreciation were awarded to Chairman H. C. Christensen of the Committee on Pharmacy Exhibit at the Chicago Century of Progress and to his co-workers in this splendid effort to emphasize to the people the public-health service of pharmacy.

The report of the Special Committee on the Council on Pharmaceutical Practice presented in the General Sessions and the discussion of Prescription Department Economics, bearing on the revision of Professional Pharmacy, the Symposium on Prescription Pricing, the address on "The Practical Value to Pharmacists of the Activities of the Council on Pharmacy and Chemistry, and the Address on Dentistry and Pharmacy," bear evidence of the absorbing thoughts to advance pharmacy and coördinate public health professions.

The address of President Fischelis presented the deep interest of the ASSOCIATION in supplying proper standards, a purpose which led to the establishment of the ASSOCIATION. The United States Pharmacopœia and the Federal Food and Drugs Act was the subject of a thoughtful address by James H. Beal as part of the program of a General Session.

The Report of the Committee on Maintenance speaks for the untiring and successful efforts of Chairman H. A. B. Dunning which have been largely instrumental in providing for American pharmacy a building in which pharmacists may well have pride and hope for it a growing usefulness. His work, with the support of every division of pharmacy, has brought distinction and further possibilities to pharmacy.

Dr. D. M. R. Culbreth, Baltimore, member since 1883, was elected honorary president and Dr. C. A. Rojahn, Halle, Germany, editor of the German Year Book of Pharmacy, was elected an honorary member of the ASSOCIATION.

The House of Delegates held representative sessions, the reports showed the coöperative value afforded by and for the constituents; the activities are in the interest affecting all divisions of pharmacy as shown by its program. The sections considered many papers in line with present-day thought. The revisions of the United States Pharmacopœia, the National Formulary and the Recipe Book marked quite a number of the contributions to the Scientific Section, the Section on Practical Pharmacy and Dispensing and the Section on Education and Legislation.

The Section on Historical Pharmacy considered many interesting papers—a number dealt with Indian materia medica; a valuable report concerned the Badianus Manuscript, an Aztec herbal, being the earliest known herbal published in the New World. It was written in Aztec by one Indian and translated into Latin by another in 1552; both were educated in a college in Mexico City. Of general interest, the paper on "Pharmacy and a Commemorative Stamp" was presented by F. A. Delgado, and illustrated by slides—The proposal is to have the Post Office Department provide a stamp commemorating the completion of the American Institute of Pharmacy.

The Conference of Pharmaceutical Association Secretaries and the Conference of Pharmaceutical Law Enforcement Officials held sessions in which the subjects of their respective activities were considered. The American Association of Colleges of Pharmacy, National Association of Boards of Pharmacy and the National Con-

ference on Pharmaceutical Research held sessions in line with the programs printed in the July JOURNAL and these with the addresses of the presidents of the former will have to suffice for this comment. The Plant Science Seminar made tours of inspection to the Estacada Ginseng and Hydrastis projects, the Peavy Arboretum, Oregon State College, and convened in Portland for the consideration of papers.

Outstanding among the entertainment features was the trip along famous Columbia River Highway, with a visit to Bonneville $32,000,000.00 dam and a Columbia River salmon barbecue luncheon at Eagle Creek. The annual banquet was presided over by F. C. Felter, at which time Dr. Tate Mason, president-elect of the American Medical Association, was introduced and addressed the guests; he was followed by Dr. Herbert C. Miller, president of the North Pacific College of Dentistry and a trustee of the American Dental Association. Mayor Carson welcomed the visitors and Hon. Dan. J. Fry spoke for the Governor. The principal address was made by President R. P. Fischelis; officers and visiting pharmacists were introduced. Frank Nau received from his fellows a plaque in recognition of his services to the profession in the North Pacific section. An interesting feature was the conferring in full form the honor of Rosarians on the following: R. P. Fischelis, knighted with Lady Fairfax Rose; E. F. Kelly, Lady Hillingdon; Ernest Little, Roselandia; Harvey A. Henry, Marcia Stanhope; Dr. Tate Mason, President-Elect of A. M. A., Mary Hart; Charles H. Evans, Dean Hole Rose.

The following former presidents and members of their families attended the annual past-presidents' dinner: James H. Beal, E. G. Eberle, Wm. B. Day, S. L. Hilton, H. V. Arny, L. L. Walton, T. J. Bradley, C. W. Johnson, H. C. Christensen, W. D. Adams, Robert L. Swain. The attendance at the annual event indicates the continued interest of these members and speaks for their loyalty and appreciation of the honor conferred by the ASSOCIATION.

Nowhere can flowers be more beautiful and abundant; the artistic landscaping brought the colors into Nature's design. The scenery was awe-inspiring, magnificent, grand and beyond comparison—a panorama of wonders in which the hospitalities of the hosts were blended.

THE EIGHTY-FOURTH ANNUAL MEETING OF THE A. PH. A.

THE 84th annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION will be held in Dallas, Texas; it so happens that the selection brings the ASSOCIATION to Texas during the celebration of the centenary of its independence and the establishment of the Republic of Texas. Celebrations will be held in a number of cities where events in the history of Texas took place, a fact which assures low rates to these points as well as to Dallas. The latter city has entertained many large organizations because of its hotel accommodations, automobile and railroad connections, it is 185 miles northeast of Austin, the State capital, and the home of the State University. The Medical and Dental Departments of Baylor University are located in Dallas. Among other educational institutions it is the seat of the Southern Methodist University, which has a campus of 625 acres and a $2,000,000.00 endowment.

Mexico and Texas are bound together by economic interests and the boundary is practically as unfortified as that between Canada and the United States. The completion of the Mexican highway link with the opening of Texas Centennial brings Mexico into close proximity with the eighty-fourth annual meeting place.

SCIENTIFIC SECTION

BOARD OF REVIEW OF PAPERS.—*Chairman*, F. E. Bibbins, George D. Beal, L. W. Rising, H. M. Burlage, L. W. Rowe, John C. Krantz, Jr., Heber W. Youngken.
(*To be revised.*)

SULPHIDE ANALOGUES OF AZO DYES HAVING BACTERICIDAL PROPERTIES.*

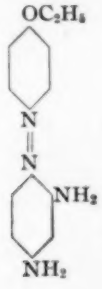
BY W. BRAKER AND W. G. CHRISTIANSEN.[1]

The bactericidal properties of a number of diaryl sulphides have been reported by Hilbert and Johnson (1) and by Moness, Braker and Christiansen (2). Since this activity is ascribed to the presence of the sulphide linkage, we have investigated the combination of this grouping with other active groups present in certain azo dyes known to be therapeutically valuable.

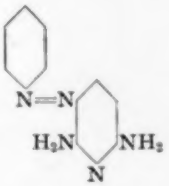
The compounds chosen for preparation contain the diaryl sulphide linkage combined with

(1) The *p*-ethoxy benzene-azo residue of serenium (I),
(2) The diamino pyridine grouping of pyridium (II).

Of the first type we prepared one example: 3-*p*-ethoxy benzene-azo, 4-hydroxy diphenyl sulphide (III). Of the second type two compounds were made: 4,4′-bis-(α,α-diaminopyridine-azo) diphenyl sulphide (IV), and 3,5-bis(4′-amino diphenyl sulphide-azo) 2,6-diamino pyridine (V).



(I)



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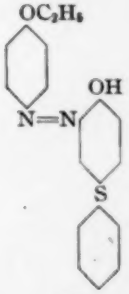

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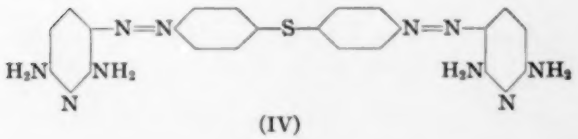
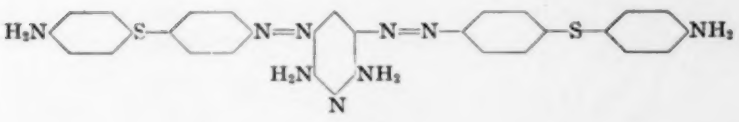


(IV)



(V)

* Scientific Section, A. PH. A., Washington meeting, 1934.

[1] Research Department of the Chemical and Pharmaceutical Laboratories, E. R. Squibb and Sons, Brooklyn, N. Y.

These compounds were readily prepared, but were found to be only slightly soluble in any of the media in which they might be used. Compound III could not be dissolved in mixtures of alcohol, water and glycerin or in water containing an equivalent of NaOH. IV and V were practically insoluble in water containing an equivalent of HCl. They were, however, tested for antiseptic activity by means of the "cup test." In this attempt at evaluation, the powdered compounds were placed in depressions in the center of an inoculated (Staphylococcus aureus) area of nutrient agar, and the area of inhibition measured after 48 hours (3). Serenium and pyridium, used as controls, showed clear zones of 4–5 mm. III and IV, under these conditions, were quite inactive, and V was only slightly active.

EXPERIMENTAL.

Preparation of 4,4'-Diamino Diphenyl Sulphide.—The method of Merz and Weith (4) was used, yielding yellowish white needles, m. p. 104–108° C. The authors state 108° C. as the m. p.

Preparation of 2,6-Diamino Pyridine.—The method of Tchitchibabin (5) yielded this substance in the form of silvery leaflets, m. p. 119° C., stated in the literature to be 119–120° C.

Preparation of p-Hydroxy Diphenyl Sulphide.—The preparation of this compound is described in a previous paper (1).

Preparation of 3-p-Ethoxy Benzene-Azo, 4-Hydroxy Diphenyl Sulphide.—1.3 Gm. *p*-phenetidine was dissolved in a mixture of 21.5 cc. of *N*-hydrochloric acid and 25 cc. of water. The substance was diazotized at 0° C. with a solution of 0.69 Gm. $NaNO_2$ in 10 cc. water. 2.02 Gm. *p*-hydroxy diphenyl sulphide dissolved in 25 cc. 2*N*-NaOH was added with vigorous stirring. The reaction mixture was allowed to stand at 0° C. for 2 hours, then at 30° C. for 4 hours longer. The red dye which had separated out was then filtered off, washed with water and dried *in vacuo*.

Yield—1.54 Gm. of a red powder.

Analysis: Found—S, 9.40%; calculated for $C_{20}H_{18}O_2N_2S$—S, 9.14%.

Preparation of 4,4'-Bis (α,α-Diamino Pyridine-Azo) Diphenyl Sulphide.—4.2 Gm. 4,4'-diamino diphenyl sulphide was dissolved in a mixture of 20 cc. conc. hydrochloric acid and 50 cc. water. Diazotization was carried out at 0° C. with a solution of 2.7 Gm. $NaNO_2$ in 20 cc. water. 4.4 Gm. of 2,6-diamino pyridine dissolved in dilute hydrochloric acid (one equivalent of HCl) was then vigorously stirred in. A red precipitate began to separate. After standing at 0° C. for one hour, then at 30° C. for 3 hours, the mixture was made ammoniacal. The precipitate was filtered off, washed with water and dried *in vacuo*.

Yield—8.2 Gm. of an orange-colored powder.

Analysis: Found—S, 6.80%; calculated for $C_{22}H_{20}N_{10}S$—S, 7.02%.

Preparation of 3,5-Bis (4'-Amino Diphenyl Sulphide-Azo) 2,6-Diamino Pyridine.—5.0 Gm. 4,4'-diamino diphenyl sulphide in 3 equivalents of dilute hydrochloric acid was diazotized at 0° C. with a solution of 1.53 Gm. $NaNO_2$ in 20 cc. water. A slight residue, present after diazotization, was removed by filtration. To the clear filtrate was added, with vigorous stirring, and at 0° C., 1.17 Gm. 2,6-diamino pyridine dissolved in dilute hydrochloric acid. Immediate precipitation occurred. After standing at 30° C. for 4 hours, the reaction mixture was made alkaline. The precipitate was filtered off, washed with water, sucked dry, washed with several portions of warm benzene and dried *in vacuo*.

Yield—4.5 Gm. of a red powder.

Analysis: Found—S, 11.29%; calculated for $C_{28}H_{24}N_8S_2$—S, 11.37%.

The biological tests on the compounds here reported were made in the Biological Research Laboratories of E. R. Squibb and Sons and we gratefully acknowledge their assistance.

SUMMARY.

1. Three new dyes, containing the diaryl sulphide linkage, together with residues present in serenium and pyridium, have been prepared.

2. These substances have been tested for antiseptic activity and have been found to be inactive.

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(2) Moness, Braker and Christiansen, JOUR. A. PH. A., 21, 558 (1932).

(3) U. S. Department of Agriculture, *Circular No. 198;* "United States Food and Drug Administration Methods of Testing Antiseptics and Disinfectants."

(4) Merz and Weith, *Ber.*, 4, 384 (1871).

(5) Tchitchibabin and Seide, *J. Russ. Phys. Chem. Soc.*, 46, 1216 (1914).

PHYTOCHEMICAL NOTES.*,[1]

No. 108. A PHYTOCHEMICAL STUDY OF THE SEED OF THE DIGGER PINE.

BY JOSEPH SEMB.

In the early part of November 1931, forty pounds of Digger pine seed were received from Mr. J. W. Preston, Chico, Calif. One hundred of these seeds were cracked and separated into seed coats and endosperms. The former weighed 53.20 Gm. (= 76.9 per cent), the latter 15.95 Gm. (= 23.1 per cent). Inasmuch as the 100 seeds weighed 69.15 Gm., the average weight of the individual seed is a trifle less than 0.7 Gm. That of the endosperm is about 0.16 Gm.

Samples of ground seed, of seed coats and of endosperm were extracted with selective solvents. The data are recorded below:

PERCENTAGE EXTRACTED.

	From Seed.	From Seed Coat.		From Endosperm.	
Solvent.	Per Cent.	A (2). Per Cent.	B (3). Per Cent.	C (4). Per Cent.	D (5). Per Cent.
Pet. ether	11.47 (1)	0.18	0.13	53.00	12.20
Ethyl ether	0.27	0.30	0.23	1.00	0.23
Chloroform	0.11	0.00	0.00	0.74	0.17
Alcohol	0.90	0.76	0.59	2.90	0.66
Water	1.98	2.00	1.44	8.20	1.89
1% HCl	15.00	18.20	14.00	27.18	6.26
1% NaOH	2.60	5.00	3.70	..	..

Of the 40 pounds of seed, 37.5 pounds or 17 Kg. were ground in the horizontal disk mill. The coarsely comminuted material was extracted in the cold with petroleum ether for 24 hours. After the percolate had been drawn off, the dregs were reground in a ball mill. This reground residue was subsequently extracted twice with petroleum ether in the cold. A test sample of the last extraction indicated that the extraction was almost complete. Most of the petroleum ether was recovered. The last traces were removed by heating on a water-bath under somewhat reduced pressure for several hours. During part of this time a current of CO_2 was passed through the liquid to assist in the complete removal of the volatile solvent. The petroleum ether extract thus obtained weighed 1950 Gm. = 11.47% of the seed or 49.66% of the endosperm.

---

* Scientific Section, A. PH. A., Miami meeting, 1931.

[1] From the laboratory of Edward Kremers.

After having been exhausted with petroleum ether, the ground seeds were percolated with alcohol. The last application of menstruum extracted about 0.15 per cent of the total seed. The recovery of the alcohol yielded a dark brown extract. 100 Gm. of dregs, in four separate experiments were extracted with the following hot solvents yielding the amounts of extract recorded:

1	Chloroform	0.04 Per cent
2	Ethyl alc.	1.13 Per cent
3	Methyl alc.	1.06 Per cent
4	Acetone	0.28 Per cent

As a result of the extractions described the following products were obtained:

(1) A petroleum ether extract, consisting principally of fatty oil.

(2) A concentrate of the cold alcoholic percolate.

(1) *The Petroleum Ether Extract (Fatty Oil).*—This product was almost colorless and odorless and had a bland taste. $d_{18°} = 0.9177$ and $d^{24°} = 0.9167$; $n_{D24°} = 1.4713$ (Abbé); $[\alpha]_D = -0.30°$. It solidified at about $-15°$.

The oil was perfectly neutral. Three saponification determinations gave 189.9, 190.4 and 189.0, respectively, or an average of 189.8. Its iodine value (Hanus) was found to be 120; its acetyl value 4.9 and 5.0; its thiocyanogen value 83.1, 83.5, 82.3, or an average of 83.0 (6). From these three values, *viz.*, saponification, iodine and thiocyanogen, the following percentages were calculated: 4.3% of saturated fatty acids, 50.5% of oleic acid, and 45.2% of linoleic acid. When one cc. was exposed to the air on a watch glass, an increase in weight of 0.7% was observed after two weeks.

Ninety-seven grams of this oil were oxidized in acetone solution by means of potassium permanganate (7). Four separate fractions were obtained. The fatty acid obtained from the first fraction had a b. p. of 202°; $n_{D21°}$ (Abbé) 1.4146; and a mean molecular weight of 115.1 (calculated from acid value), thus indicating hexoic acid. The second fraction yielded an acid with a b. p. of 246.2° and a molecular weight of 148.7 (from acid value). This indicates nonoic acid probably contaminated with hexoic acid. The third fraction yielded an acid which was insoluble in petroleum ether but somewhat soluble in hot water. It had a m. p. of 106° and a molecular weight of 188.2 (from acid value assuming a dicarboxylic acid). This indicated azelaic acid. The fourth fraction consisted of 16 and 18 carbon atom fatty acids.

These data indicate that the first double bond in every case is at the 9–10 position, also that this or a second double bond is in the 6–7 or 9–10 position from the end. Had malonic acid been isolated, these data would indicate that only two unsaturated fatty acids are present, that is, the 9–10 oleic and the 9–10, 12–13 linoleic acid. Undoubtedly malonic acid was formed but was lost in the process of purification and isolation.

1625 cc. of the fatty oil were saponified by refluxing with alcoholic KOH. The alcohol was removed by vacuum distillation. About 14 liters of water were added to the potassium soap. The non-saponifiable material was extracted with ethyl ether. Troublesome emulsions were encountered, but the addition of small amounts of methyl alcohol was very effective in breaking these emulsions. Most of the ethyl ether was recovered from the unsaponifiable and the latter was turned over to Dr. Bonstedt.

Dilute sulphuric acid was now added to the soap solution, and immediately a fatty acid ethereal layer (about 3 l.) separated out. (This shows that the soap held a considerable quantity of ethyl ether in solution.) The aqueous layer containing the glycerin was drawn off and shaken twice with ether. The three ethereal portions were united and washed several times with water. The ether and occluded water were removed by heating under vacuum for $2^1/_2$ hours. The total weight of fatty acid was 1390 Gm. Iodine value 124.2; thiocyanogen value 85.0; acid value 198.1; molecular weight 283.1 (computed from the acid value). Using these three values, the following percentages were calculated: saturated fatty acids 5.5%; oleic acid 51.0%, linoleic acid 43.5%.

1223 grams of this fatty acid were dissolved in 7200 cc. of alcohol. This solution was then heated on the water-bath and to it were added 7200 cc. of alcoholic lead acetate, containing 900 Gm. of the salt (8). The mixture was exposed over night to a temperature of about 6°. The next morning the supernatant liquor was drawn off and the mushy, sticky lead soap adhering to the side of the flask was redissolved in 7200 cc. of hot alcohol which contained a little acetic acid. Again the solution was set outside over night to permit the solid lead soap to settle out, and again the supernatant liquid was drawn off and the solid lead soap redissolved in hot alcohol, the alcoholic solution allowed to cool and filtered. All the alcoholic solutions were mixed. The mixed solutions are supposed to contain the lead soap of the liquid fatty acids. The insoluble lead soap obtained was covered with 400 cc. of ethyl ether. After several days the ethereal solution was drawn off. As will be seen later, the fatty acid recovered from the ethereal solution was added to the free fatty acids from the ether-insoluble lead soap.

The Solid Fatty Acids.—The insoluble lead soap was decomposed with dilute HNO_3 and the freed fatty acids extracted with ethyl ether. The ether was removed leaving a solid residue weighing 140 Gm. with a melting point of 31°. The attempt to separate the solid fatty acids by fractional crystallization was without success. Likewise fractional precipitation as magnesium salts was unsatisfactory. The odds and ends were gathered and found to weigh about 100 Gm. To this was added the fatty acid obtained from the ethereal solution that had stood over the alcoholic insoluble lead soap. The methyl esters of this mixture of supposedly saturated acids were made and distilled under 5 mm. pressure.

No.	B. P., ° C.	Wt.	M. P., ° C.	Iodine No.	Saponification Value.
1	...–160	9.8	17	....	....
2	166–170	16.3	18.5	53.3	203.9
3	170–174	26.9	15.5	....	....
4	174–176	25.7	12.0	....	....
5	172 ($4^1/_2$ mm.)	20.68	9.0	84.9	201.7
6	176–182	45.8	12.0		191.1
7	182	15.7	15.0	77.8	
8	Residue	12.1			
		173.0			

The high iodine values may be attributed to imperfect separations. It is well known that none of the methods are any too satisfactory. The methyl ester fraction No. 3 was saponified and the freed fatty acid treated with lead acetate as stated above except that this solution was allowed to cool to only 18°, not to 6°. The insoluble lead soap thus obtained was firm and not mushy as in the original separation. The free fatty acid from this insoluble lead soap had a m. p. of 56°, an iodine value of 5.8, and a mean molecular weight of 261.7 (from the acid value), indicating a predominance of palmitic acid. The freed fatty acid from the alcoholic supernatant liquid gave iodine values of 109.8, 110.8 and 112.8 or an average of

111.2. This indicates the ratio of oleic to linoleic acid to be about the same as that in the original oil (9).

Methyl esters Nos. 1 and 2 were mixed and bromine added at $-10°$ to the petroleum ether solution. The unbrominated saturated fatty esters were separated by reduced pressure distillation. A fatty acid with a m. p. of 63° and whose corresponding methyl esters melted at 28° was obtained. This indicates that palmitic acid is present. The large amounts of acids obtained at various times from the various fractions with a melting point around 56° and a mean molecular weight of about 262 indicates that the greater amount of the saturated fatty acid is palmitic acid.

From fractions Nos. 6 and 7 a fatty acid was isolated, this time by means of the lead-acetate-alcohol method, with a m. p. of 65.5°. The methyl ester of this had a m. p. of 39°. The mean molecular weight was 290° (from acid value). The presence of stearic acid was verified by means of a method suggested by E. Twitchell (10). To 20 parts of the above acid, weighed on an analytical balance, 80 parts of Eastman's stearic acid, also weighed on an analytical balance, was added. The mixture was dissolved in ether and the ether evaporated. The addition of these 20 parts of above acid to 80 parts of Eastman's stearic acid depressed the m. p. of the Eastman stearic acid less than one degree. Therefore, the larger part is stearic acid.

The high molecular weight of the stearic acid fraction discussed above indicates that a saturated fatty acid higher up in the series than stearic is present. From the methyl ester fraction No. 8 a solid fatty acid fraction melting higher than that recorded in the literature for stearic acid was obtained. The quantity was too small to be identified.

The Liquid Fatty Acids.—The alcohol-soluble lead soap was decomposed with H_2S. The freed acids were brominated in acetic acid (11), and from the reaction mixture 208 Gm. of tetrabromstearic acid were obtained. The melting point of this pure white substance, upon recrystallization from petroleum ether, was 114.0° and the molecular weight, computed from the acid value, was found to be 608.0. The bromine content, determined by the Stepanow method, was found to be 53.27 per cent. The reported melting point of tetrabromstearic acid is 114.0°, the computed molecular weight 600, and the bromine content 53.3 per cent.

The filtrate from the tetrabromstearic acid, which is supposed to contain only the dibromstearic acid was debrominated with zinc. Five grams of the recovered fatty acid were oxidized with dilute $KMnO_4$. About one Gm. of a petroleum ether-soluble fatty substance with a m. p. of 37.0° was obtained. The petroleum ether-insoluble residue was dissolved in alcohol. Upon cooling, about one Gm. of a white substance with a m. p. of 131.5° was obtained. Hilditch reports 9,10 dihydroxy stearic acid to melt at 132.0°.

The rest of the liquid acid was steam distilled in order to see if there were any volatile fatty acids present, but the results were negative. This would rule out the presence of any appreciable amount of 6-, 8- and 10-carbon atom acids and possibly a 12-carbon atom acid. According to Hilditch's (*Fats and Waxes*, 74 (1927)) these lower saturated acids might be expected with the unsaturated acids.

Next the methyl esters were made of this liquid acid portion and the esters fractionated under 7 to 8 mm. pressure.

No.	B. P., ° C.	Iodine Value.	Mol. Wt. from Acid Values.		Saponification Value.	
1	–186 (8 mm.)					
2	186–188 (7 mm.)	110.7	290.0		193.4	
		110.3	291.3	290.7	192.1	192.8
3	186–188 (7 mm.)					
4	188–190 (7 mm.)					
5	190	120.5	290.7		193.0	
			291.8	291.3	192.3	192.6
6	190 + residue					

The very small change in boiling point would seem to indicate a very constant boiling constituent. However, the very high iodine value in these esters is noteworthy. The iodine value of oleic acid is 90.0 and that of methyl oleate about 86.0. This would indicate that a great deal of the linoleic acid had not been removed as tetra bromide. This fact was established by isolating tetrabromstearic acid when the freed acid was brominated in petroleum ether solution.

(1) This percentage is obtained from fat extracted from the main experiment.
(2) Computed with reference to the seed coat.
(3) Computed with referenced to the entire seed.
(4) Computed with reference to the endosperm.
(5) Computed with reference to the entire seed.
(6) The method of Zeleny and Baily, *J. I. E. C.*, 24, 109 (1932), was used.
(7) Hilditch and Vidyarthi, *Royal Society, A.* 122, 552 (1929).
(8) Hilditch, *Fat and Waxes*, 74 (1927); Twitchell, E., *J. I. E. C.*, 13, 806 (1921).
(9) Consideration of this fact, that at 6° a great deal of oleic and linoleic acids, in a ratio approximating that in the original, comes down while at 18° very little separates should be worth recalling when this experiment is repeated. If an alcoholic solution of lead acetate is added to an alcoholic solution of fatty acids the following situation arises:

(*a*) $Pb(Ac)_2$ + linoleic acid (or oleic) ⟶ PbAc-linoleate + acetic acid.

(*b*) $Pb(Ac)_2$ + Palmitic acid (or some sat. acid) PbAc-palmitate + acetic acid.

In this particular case reaction "*a*" predominates and the opportunity of PbAc-palmitate to react with another palmitic acid molecule to yield $Pb(palmitate)_2$ is remote compared with its opportunity to react with a molecule of linoleic acid to yield Pb palmitate-linoleate, which undoubtedly is more soluble than $Pb(palmitate)_2$ but less soluble than $Pb(linoleate)_2$. The precipitate at 6° was probably a half-saturated and half-unsaturated lead soap such as Pb palmitate-linoleate. At a higher temperature only the saturated lead soaps settle out.

(10) *J. I. E. C.*, 6, 564 (1914).
(11) Rosenthaler-Ghosh, "The Chemical Investigation of Plants," 83 (1930).

THE LEAF OILS OF WASHINGTON CONIFERS: VII. JUNIPERUS OCCIDENTALIS.*

BY E. V. LYNN AND LOUIS FISCHER.[1]

Juniperus occidentalis Hook. is a tree 20 to 40 feet or more in height. It grows on mountain slopes and high prairies of western Idaho, eastern Washington and Oregon and in the Cascade and Sierra Nevada mountains. Seldom is it found at elevations less than 6000 feet.

The leaves and branches for this work were collected in 1930 near Bend, Oregon. From 600 pounds of fresh material was obtained 986 Gm. of oil by steam dis-

* Scientific Section, A. PH. A., Washington meeting, 1934.
[1] Seattle, Washington, June 7, 1934.

tillation, a yield of about 0.36 per cent. Due to various reasons the oil was not examined at the time. Three years later it had resinified somewhat and was, therefore, rectified with steam, giving a light yellow product with a characteristic odor of Juniper.

The constants, determined in the usual way, were: d_{25} 0.9212; n_D^{25} 1.4745; $[\alpha]_D^{25}$ +21.91°; acid number 1.45; saponification number 110.53 (38.17 per cent of bornyl acetate); after acetylization 149.58 (11.06 per cent of free borneol, 41.05 per cent of total borneol). Aldehydes and ketones and primary alcohols were absent or present in very small quantities.

Free Acids.—Extraction by 5 per cent sodium carbonate gave a small amount of free acids in which acetic acid was identified by color reactions and by conversion to ethyl acetate. Judging by odor, there may also be present a small amount of acid resembling valeric.

Phenols.—Extraction by 5% NaOH solution gave 0.5 per cent of a dark brown liquid with an odor of creosote, which did not solidify above −15° C. No nitroso compound or urethane could be obtained from it, but it gave color reactions similar to carvacrol. With ferric chloride in aqueous solution it produced a violet color and in alcoholic solution a yellow-brown with a green tinge. The Flückiger test with chloroform and alkali resulted in a light red color, somewhat darker than with carvacrol.

The remaining oil was fractionated at 10 mm. and that portion boiling below 95° C. was repeatedly refractionated.

Fraction.	Per Cent.	Refraction.
155–160°	1.61	
160–162	1.69	1.4700
162–169	10.15	1.4736
169–175	12.30	1.4805
175–180	6.31	1.4845
180–185	2.31	1.4802
Total	34.37	

Camphene.—The first fraction $[\alpha]_D$ +9.9°, gave no nitrosochloride and probably contained no pinene. Portions of each of the first two fractions were hydrated by the well-known Bertram-Walbaum method, giving light yellow oils. No phenylurethanes could be obtained, but the odor was decidedly that of isoborneol and a camphoraceous odor was noted after oxidation with chromic acid. The amount of oil was too small to permit exact identification, but the presence of some camphene is indicated.

The third fraction was oxidized with potassium permanganate in the usual way for betapinene but no product like sodium nopinate or nopinone could be obtained. This fraction also gave no hydrochloride.

Alpha Phellandrene.—Fractions three, four and five gave copious yields of a nitrite melting at 112° C. This was repeatedly dissolved in chloroform and precipitated with methyl alcohol, finally giving a melting point of 114° C. This shows the presence of alpha phellandrene.

Fraction five had an odor of limonene but gave no nitrosochloride and no bromide, nor did fraction four.

Cymene.—The last two fractions contained small amounts of cymene, as was

shown by oxidation with hot potassium permanganate to *p*-hydroxy isopropyl benzoic acid, melting at 154–155° C.

The oil of higher boiling point was saponified by 3 per cent alcoholic potassium hydroxide for two hours and then submitted to repeated fractionation at 10 mm. into three portions.

Fraction.	Per Cent.	Refraction.
...– 95°	1.07	1.4778
95–120	39.69	1.4744
120–125	1.84	1.4885
Above 125 and loss	23.03	....
Total	65.63	

Borneol.—The first two consisted almost entirely of borneol which was separated in the crystalline state, melting point 203–204° C., phenylurethane 138° C. Oxidation of the oil gave camphor, identified by odor and by the semicarbazone melting at 235–236° C.

Although terpineol was suspected, no nitrosochloride could be obtained from the second fraction. Also cadinene was not present in the last distillate nor in the residue, since no hydrochloride could be obtained.

Combined Acids.—The alkaline liquor from saponification was concentrated, acidified and then distilled with steam. Practically all of the acid was found in the distillate and appeared to consist almost entirely of acetic acid. This was identified as before by conversion to ethyl acetate.

Summary.—The fresh leaves and branches gave 0.36 per cent of oil whose composition was found to be about: bornyl acetate 40; borneol 11; alpha phellandrene, cymene and probably camphene 35; acetic acid 0.2; phenols 0.5; compounds of higher boiling point and loss 14 per cent.

DRUG EXTRACTION. IV. THE EFFECT OF VARIATION IN SOLVENTS ON THE EXTRACTION OF JALAP.[1,2]

BY WILLIAM J. HUSA[3] AND PAUL FEHDER.

Jalap having been selected as a typical resin-containing drug, a study was made of the effect of solvents in relation to swelling, penetration, imbibition and extraction.

EXPERIMENTAL PART.

Material Used.—From a reputable dealer, a 125-lb. shipment of Jalap U. S. P. was obtained, consisting of 10 lbs. whole drug, 40 lbs. of 60 mesh and 25 lbs. each of 20, 40 and 80 mesh, according to the following specifications: "The above samples are to be prepared by taking 125 lbs. of jalap, selecting a representative sample of 10 lbs. for the whole root and a representative 40-lb. sample to be milled to 60 mesh, and three separate 25-lb. samples to be milled to 20, 40 and 80 mesh, respectively. Each portion is to be milled separately so that all portions will be as nearly alike as possible, except for the difference in milling."

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[1] Presented before the Scientific Section, A. PH. A., Washington, D. C., 1934.

[2] This paper is based on a thesis presented to the Graduate Council of the University of Florida by Paul Fehder, in partial fulfilment of the requirements for the degree of Master of Science in Pharmacy.

[3] Head Professor of Pharmacy, University of Florida.

A thorough pharmacognostical study showed that the shipment conformed with the U. S. P. requirements.

Swelling of Jalap in Solvents.—The swelling effect of solvents was determined by the technique (1) of measuring the width of thin strips of jalap tissue before and after addition of solvents using a filar micrometer. The strips, 0.25 to 0.50 mm. in width, were cut from sections obtained by use of a small carpenter's plane. The results are expressed on a percentage basis, taking the width of the dry strips as 100 and each value is the average of several determinations. The thickness of the sections was measured by means of a micrometer caliper.

TABLE I.—SWELLING EFFECT OF SOLVENTS ON SECTIONS OF DECORTICATED JALAP TISSUE.

			Width of Section (on Basis Dry = 100). After Time in Minutes.								
			Dry.	Wet.							
Solvent.	Section.	Average Thickness of Section in Mm.	0.	1.	5.	10.	20.	40.	60.	100.	120.
Water	Cross	0.042	100	133	134	134	133	133	134	134	133
Alcohol	Cross	0.044	100	101	103	106	108	110	109	110	110
Alcohol	Longitudinal	0.066	100	100	100	105	108	111	112	117	117

The results in Table I indicate that swelling equilibrium is attained during the first minute in water but only after 40 minutes or more in alcohol. Further tests showed that longitudinal sections swelled 47% during the first minute in water on the average; the swelling was 60–70% in sections containing much transporting tissue and 35–45% in sections consisting chiefly of starch-bearing parenchyma. The initial swelling of longitudinal sections in alcohol likewise varied from 6% in sections containing much transporting tissue to 0% in those consisting mostly of starch-bearing parenchyma. During the first minute corticular tissue showed neither expansion nor contraction in alcohol, while in water pure cork tissue swelled to about twice its original size, outer bark with a large proportion of cork swelled about 40% and outer bark with little cork swelled about 25%.

Penetration of Solvents into Jalap Blocks.—Using a special machine saw at the planing mill, blocks were cut with the grain running the long way, the blocks being 10 mm. square and averaging 2.4 mm. in thickness. Using three blocks for each solvent, these were immersed in water, alcohol and glycerin, respectively, contained in bottles. The bottles were then suspended in a Freas large-size water thermostat, at 30° C. After various intervals, the blocks were removed, excess solvent taken up with filter paper, and the blocks weighed and measured. The chances for error in measuring swelling with a micrometer caliper between surfaces that are somewhat flexible are considerable and may lead to deviations that would not be shown in similar measurements between rigid surfaces. However, by taking the average of several blocks, the degree of error is reduced to an extent which allows helpful conclusions to be drawn.

TABLE II.—PENETRATION OF LIQUIDS INTO JALAP BLOCKS.

(Average Weight of Three Blocks Stated on Basis: Dry Weight = 100%.)

	After Time Intervals in Hours.													
	0.	1.	2.	3.	9.	12.	24.	48.	72.	96.	216.	552.	720.	888.
Water	100	194	224	238	208	213	250	243	238	242	233	229	233	228
Alcohol	100	141	141	141	104	104	143	133	135	138	130	131	133	143
Glycerin	100	130	130	130	102	101	130	121	121	122	117	125	130	141

As shown in Table II, the liquids penetrated rapidly during the first hour. Between three hours and nine hours there was a sharp drop in weight of the blocks

in each of the three liquids probably due to loss of soluble constituents, followed by an increase in weight, reaching a maximum at 24 hours and showing only slight changes thereafter.

TABLE III.—SWELLING OF JALAP BLOCKS IN LIQUIDS.

(Average Thickness of Three Blocks Stated on the Basis: Dry = 100%.)

	After Time Intervals in Hours.													
	0.	1.	2.	3.	9.	12.	24.	48.	72.	96.	216.	552.	720.	888.
Water	100	109	119	124	131	130	127	127	128	126	123	123	120	121
Alcohol	100	100	100	100	102	101	101	101	101	101	100	101	101	101
Glycerin	100	100	99	99	99	99	98	98	98	98	98	100	101	102

As shown in Table III swelling by water reaches a maximum of 31 per cent in nine hours. From then on, the thickness of the blocks gradually decreases, due apparently to the loss of water-soluble substances. Alcohol causes very little swelling; a maximum of 2 per cent is observed at the end of nine hours. Glycerin causes a slight shrinkage, due possibly to the abstraction of water from the cells, followed by recovery and very slight swelling.

Effect of Solvents on Powdered Jalap.—In studying the effect of solvents on powdered jalap, a filtration method devised in the present study but previously described by Husa and Magid (1) was used. The filtrates were assayed for total resins by Warren's method (2). The drug was found to contain 7.87 per cent of resin by the U. S. P. method of assay and 6.87 per cent by Warren's method of assay. Warren reported results of his collaborators, showing a similar lower result by his method than by the U. S. P. method, due, apparently, to removal of coloring matter, sugars and other water-soluble extractives from the resin by Warren's method.

TABLE IV.—EFFECT OF SOLVENTS OF JALAP IN NO. 60 POWDER.

Period of Maceration.	Weight in Gm. of. Liquid in Marc.	Dry Marc.	Filtrate.	Loss of Menstruum.	Total Extractive.	Resins in Filtrate.
			Absolute Alcohol.			
15 min.	7.9	8.42	81.5	1.2	0.69	0.55
1 hour	7.9	8.40	81.9	0.8	0.70	0.57
5 hours	8.3	8.39	81.5	0.8	0.72	0.57
24 hours	8.3	8.32	81.8	0.5	0.78	0.57
			Alcohol.*			
15 min.	8.7	8.22	81.5	1.0	0.88	0.61
30 min.	8.4	8.18	81.5	1.2	0.96	0.59
1 hour	8.9	8.18	81.0	0.8	0.93	0.56
5 hours	9.1	8.11	81.1	0.6	1.01	0.57
24 hours	8.5	8.02	81.8	0.6	1.08	0.58
			Alcohol 9 Vol.—Water 1 Vol.			
15 min.	9.9	7.42	80.8	0.6	1.68	0.58
1 hour	10.2	7.36	80.7	0.6	1.76	0.57
5 hours	9.5	7.21	81.6	0.5	1.90	0.59
24 hours	9.5	7.15	81.5	0.6	1.96	0.59

Alcohol 4 Vol.—Water 1 Vol.						
15 min.	10.8	6.81	80.2	0.7	2.29	0.57
1 hour	11.7	6.74	79.5	0.5	2.34	0.56
5 hours	11.4	6.75	79.5	0.8	2.34	0.56
24 hours	11.6	6.76	79.5	0.6	2.33	0.56
Alcohol 3 Vol.—Water 2 Vol.						
15 min.	13.0	6.34	78.4	0.6	2.77	0.50
1 hour	12.9	6.34	78.2	0.7	2.76	0.49
5 hours	13.1	6.40	78.0	0.7	2.70	0.49
24 hours	13.1	6.38	78.2	0.6	2.74	0.50
Alcohol 1 Vol.—Water 2 Vol.						
15 min.	17.1	6.52	73.6	0.6	2.57	0.22
1 hour	17.0	6.46	74.0	0.4	2.66	0.18
5 hours	17.1	6.32	73.9	0.5	2.80	0.20
24 hours	16.7	6.10	74.4	0.5	3.00	0.19
Alcohol 1 Vol.—Water 7 Vol.*						
15 min.	22.1	6.7	68.4	0.9	2.4	Less than 0.1%
1 hour	23.7	6.6	67.1	0.7	2.5	Less than 0.1%
5 hours	23.5	6.6	66.9	1.0	2.5	Less than 0.1%
24 hours	22.8	6.5	68.1	0.7	2.6	Less than 0.1%
Distilled Water.*						
15 min.	27.0	6.8	63.2	0.9	2.3	Negligible
1 hour	27.5	6.7	62.2	1.6	2.4	Negligible
5 hours	28.7	7.2	60.3	0.4	2.1	Negligible
24 hours	27.9	6.7	61.5	0.9	2.6	Negligible

* Conducted at room temperature; all others conducted in thermostat at 30° C.

From the results in Table IV, it appears that the extraction of resin is as complete in 15 minutes as in 24 hours, but the percentage of total extractive in the filtrates increases with time. With higher percentages of alcohol, imbibition decreases and less extraneous matter is extracted along with the resins. The higher percentages of alcohol extract the same amount of resin but with alcohol 4 vol.—water 1 vol. and more aqueous mixtures, less resin is extracted.

DISCUSSION OF RESULTS.

Effect of Solvents on Thin Strips.—Swelling equilibrium in thin strips of jalap tissue was reached within 1 minute, as was the case with chestnut wood (1) and the wood of belladonna root (3). For the same type of jalap tissue, swelling across the grain in liquids was greater in longitudinal sections than in cross sections. Perhaps this means that in a cross section of a fibre or vessel, there is more mechanical resistance to swelling than when the fibre or vessel is split longitudinally.

Penetration and Swelling of Jalap Blocks.—There is no direct relationship between the rate of swelling and the rate of increase in weight. At nine hours, the swelling with water and with alcohol is at a maximum, while the weight of the blocks is at a minimum. The blocks immersed in alcohol gained about 40% in weight, while the swelling was not over 2%.

Imbibition and Extraction of Powdered Jalap.—Using belladonna root in No. 40 powder, Husa and Magid (1) found that imbibition of alcohol-water mixtures increased with decreasing alcohol content; similar results were obtained in the present study using jalap in No. 60 powder. As far as present results go, alcohol of U. S. P. strength and absolute alcohol seem to be the best solvents for the extraction of jalap resin; with more aqueous mixtures a greater proportion of inert extractive is removed along with the resin.

SUMMARY.

Alcohol, water and glycerin have been studied from the standpoint of swelling effects and rate of penetration, using jalap in the form of thin strips and blocks. Using a series of alcohol-water mixtures in a study of imbibition and extraction of powdered jalap, it was found that with increasing concentration of alcohol there is a decrease in imbibition and a decrease in the proportion of extraneous matter extracted along with the resins.

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THE APPLICATION OF STATISTICAL METHODS TO PHARMACEUTICAL RESEARCH. IV. METHODS OF RECORDING DRUG ACTION.

BY J. C. MUNCH[1] AND F. E. GARLOUGH.[2]

How much of a drug is required to produce a definite action? This question constantly arises in discussing the narcotic potency of a drug like cocaine, the relative soporific value of several barbiturates, the anesthetic concentration of ether, the cathartic dose of cascara, the lethal or the convulsant dose of strychnine. Official compendiums list the "doses" of drugs as a matter of convenience and of practicality. Many original articles dealing with quantitative measures of drug action, as well as compilations of toxic and lethal doses (9) give tables showing doses per animal or per kilo, which are withstood, which produce injury, which produce the desired type of response, or which produce death within stated time limits.

The general impression is regarding relationship of dose to effect results from the usual method of laboratory study. A series of doses of a product is given to animals and the effects observed. Too small a dose fails to produce discernible or detectable effects: this is a "subminimal" or "subliminal" quantity. As the dose is increased there is a change in the normal appearance of the test animal, which is attributed to the action of the drug. After showing the characteristic response for some time, the effect passes off and the animal recovers. The smallest concentration that produces such a response is often called the "minimum effective dose" (MED). Increases in dose cause greater intensity or prolongation of action until a quantity is reached that causes some of the test animals to die. This dose may be

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called the "maximum tolerated dose" (MTD) or the "minimum lethal dose" (MLD). With still further increases in dosage, further increases in the death rate are observed until a sufficient quantity is administered to produce death in all the test animals. This quantity may be known as the "absolute lethal dose" (ALD) or the "certain lethal dose" (CLD).

Probably as a means of convenient expression, the minimum lethal dose (MLD) has been used as a basis for recording the relative activity of different drugs under the same conditions, and of the same drug under different conditions. All workers are not interpreting MLD in the same manner. To some it means that dose which just produces death in one or more animals (usually of an unstated total number tested); to others it means the dose that kills all animals injected (one or more!); to others it means that dose that kills two-thirds, three-fourths or four-fifths of the test animals. It is obviously impossible to compare results obtained by different investigators under such conditions.

From the results and interpretations published in many reports, it would appear that some investigators believe that the administration of gradually increasing quantities of a drug produces no effect whatsoever, until suddenly the addition of the last increment causes an overwhelming response, and a passage from 0 per cent to 100 per cent of deaths of the injected animals. However, careful studies of drug action have shown that animals do not respond in this abrupt fashion. So long as the dose is below the effective dose on the most susceptible animal tested, no effect can be detected. As the dose is increased, the most susceptible animals react. There is a marked difference in susceptibility of various animals selected from the same colony, born and bred under ostensibly identical conditions. With increase in dosage, there is an increase in the percentage of animals showing a positive response, until finally that dose is reached that produces the characteristic effect in all the test animals. The relation between dose and effect has been found to follow an ogive or S-shaped curve. The reports by Shackell and co-workers (23, 24, 25) in 1923, appear to be the earliest pointing out the S-curve relationship. In a paper published in 1927, Trevan (26) developed the variability of animals into a blessing rather than a curse: that is, he developed the "standard curve" into a method of more exact measurement of activity, and showed that the form of the characteristic curve depended upon the combined effect of a large number of factors (sex, temperature, diet, etc., etc.). He confirmed earlier work (7), indicating the relationship between the number of animals used and the variability of the result obtained. He also pointed out that the "discrepant" or unexpected results should not be eliminated from the final average "except on the clearest evidence of a mistake in technique." "Even when the medial lethal dose remains constant, the preparation of a standard is necessary to correlate the work of different laboratories, and to eliminate the effect of variations in technique and the strain of animals in use."

Investigations (1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 17, 22) have shown that this curvilinear relationship seems to be a general index of animal response to drugs of various pharmacodynamic activities. Various special and rather involved mathematical procedures have been proposed by which the relation between dose and effect will approach linear, rather than curvilinear representation. In general, there is a very close approach to a linear relationship when doses are considered affecting between 25 and 75 per cent of the total animals used: in many instances

the range may be extended to the interval between 10 per cent and 90 per cent. No definite relationship has been established between the dose affecting 1 per cent and the dose affecting 100 per cent: in some instances the ratio is 2, in others 20. Since the curve most closely approaches a straight line for the dose affecting half of the test animals, Trevan proposed the "LD_{50}" dose as a basis of measurement. This has been substantiated in subsequent investigations, although comparisons can be made at any other level of activity, as long as the same intensity of response is measured for all the drugs compared.

In our studies on aconite, morphine, picrotoxin and strychnine, we have had an opportunity to investigate the possibilities of using the standard curve. Results may be measured for accuracy and correlation by methods recorded in previous papers in this series (16, 18). The customary method of expression of the LD_{50} or any other quantitative effect was incomplete because the number of animals giving this percentage response was unknown. This may be remedied by the use of a

TABLE I.—TOXICITY OF ACONITINE TO WHITE RATS.

Dose Mg./Kg.	Per Cent Killed. Subcutaneous.	Intraperitoneal.
0.05	..	0
0.06	..	0
0.07	..	44
0.075	..	33
0.08	0	52
0.09	..	61
0.10	8	84
0.11	..	87
0.125	35	96
0.15	47	100
0.175	77	...
0.20	91	...
0.22	100	...

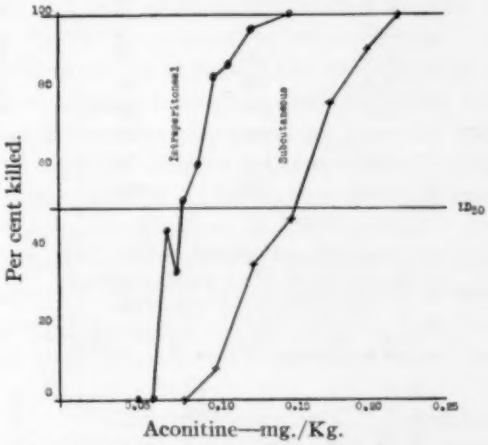

Fig. 1.—Toxicity of aconitine to white rats—mg./Kg.

subscript indicating the number of animals used preceding capital letters indicating the nature of the response desired, and followed by another subscript indicating the percentage of reacting animals taken as a desirable degree of drug effect. For example, if the subcutaneous injection of 0.06 mg. per Kg. of aconitine to guinea pigs killed 9 of 10 injected animals, this might be condensed to: aconitine, guinea pig subcutaneous, 0.06 $mk_{10}LD_{90\%}$. Now, if 0.04 mg. per Kg. killed 1 of 5 guinea pigs it would be recorded as: 0.04 $mk_5LD_{20\%}$. Similar expressions may be developed for anesthetic, narcotic, soporific, depressant or other types of drug response.

In studying the lethal dose of aconitine (21), a series of rats weighing between 150 and 200 Gm. were fed the same diet and stored under the same conditions. Subcutaneous or intraperitoneal injections were made, observing the usual technique. After it was established that subcutaneous injection of 0.08 mg. of aconitine per Kg. killed none of 25 rats, or 0 per cent, successive series of rats were injected with progressively larger doses up to 0.22 mg. per Kg. which killed 100 per cent. Consolidated results showing the doses and the percentage of animals killed are given in Table I and Fig. 1.

The U. S. P. guinea pig method for the bioassay of aconite requires that 0.060 mg. of aconitine per Kg. should kill 2 of 3 guinea pigs within 12 hours after subcutaneous injection. This would correspond to 0.06 mk_2LD_{67}. Compared at this level, the LD_{67} of aconitine for rats was 0.175 mg. per Kg. showing that approximately 3 times as large a dose of aconitine was required to kill rats as to kill guinea pigs.

In studying the action of picrotoxin upon mice following subcutaneous injections, it was found (20) that doses below 1.5 mg. per Kg. produced no detectable effect; doses between 2.0 and 3.5 mg. per Kg. produced convulsions; and doses between 3.0 and 3.5 mg. per Kg. produced death (Table II and Fig. 2). Plotting these results showed a convulsant zone extending on the one side into the non-convulsant, and on the other to the death zone. Bioassays of picrotoxin and its preparations could be made by simultaneous tests upon mice with a standard picrotoxin and the unknown product, to determine the $_5LD_{80\%}$, and the activity could be expressed in terms of standard picrotoxin. In general, 5 mg. per Kg. of picrotoxin produced this effect, although variations in the susceptibility of the mouse colony required the use of doses ranging from 4 to 7 mg. per Kg. The CD_{50} was approximately 2 mk.; the LD_{50} 4 mk., or twice the CD.

TABLE II.—ACTION OF PICROTOXIN UPON MICE—SUBCUTANEOUS INJECTION.

Dose Mg./Kg.	Per Cent Showing. Convulsions.	Death.
1.5	0	0
2.0	54	0
2.5	80	0
3.0	96	35
3.5	100	22
4.0	100	29
4.5	100	23
5.0	100	69
5.5	100	100

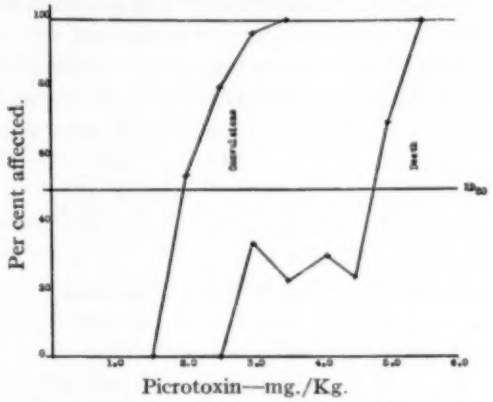

Fig. 2.—Action of picrotoxin on mice—subcutaneous injection.

TABLE III.—POSITIVE MOUSE TAIL RESPONSE OF MICE TO MORPHINE—SUBCUTANEOUS INJECTION.

Dose Mg./Kg.	Per Cent Showing Positive Response. Lab. A.	Lab. B.	Lab. C.
0.5	...	16	...
1.0	...	53	0
1.11	8	...	...
1.25	20	...	1
1.43	39	...	...
1.67	60	...	5
2.0	85	79	10
2.5	..	91	20
3.0	..	100	31
4.0	..	...	40
5.0	..	100	65
6.0	..	...	90
7.0	..	...	100

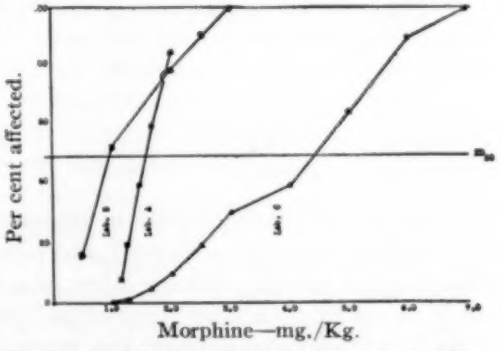

Fig. 3.—Positive reactions of mice to morphine—subcutaneous injection.

In studying the variations in susceptibility of mice to subcutaneous injections of morphine solutions (19), using the "tail curve" as an index of activity, tests were conducted independently in three different laboratories. Results obtained are shown in Table III and Fig. 3 and indicate typical S-curve responses. The differences in quantitative responses in different laboratories indicate the effects of various conditions that were not identical. For this reason it is obviously necessary to standardize the behavior of test mice. These great divergences in different laboratories indicate the futility of attempting to say that a particular dose of morphine is the smallest dose that will produce a typical curvature of the tail.

Our studies upon the lethal doses of strychnine administered subcutaneously, intraperitoneally, incorporated with food or administered by stomach tube to hundreds of ground squirrels, prairie dogs and rats have shown wide species variations. In tests by Moore, Spencer and Ward, under various working conditions, attempts have been made to determine the LD_{10}, LD_{50}, LD_{90} and LD_{100} upon animals deprived of food for 24 hours, then fed bait containing a known amount of strychnine, or injected with 0.5 per cent strychnine solution by stomach tube. In the control of noxious rodents, it is desired to obtain at least LD_{90} and it is ideal to hope for an LD_{100}, response. The data obtained on adult animals following oral administration of strychnine in the course of these investigations are given in Table IV and Fig. 4. It is obvious that there is a species difference between the Douglas ground squirrel and the Columbian ground squirrel. The former is much more susceptible to small doses, even though the L_{100} doses are practically identical. The different effects following changes in altitude are observed in the results obtained on rats. In Ward's experiments in Denver (27) at 5280 feet, rats were much more susceptible than litter mates that had been shipped to Portland, Oregon, held there for three months on the same food, and then injected with the same strychnine by Moore (27).

TABLE IV.—VARIATION IN ORAL LETHAL DOSE OF STRYCHNINE FOR RODENTS, DOSE IN MG./KG.

Animals.	Per Cent Killed. LD_{10}.	LD_{50}.	LD_{90}.	LD_{100}.
Ground squirrel (Douglas)	3.0	8.0	20	22.0
Ground squirrel (Columbian)	8.0	12.0	18	22.5
Prairie Dog (Zuni)	3.0	4.0	5	7.0
Rats—Denver	5.0	7.5	..	10.0
Rats—Portland	7.5	9.0	..	12.5

increase in altitude. The LD_{100} was 22.5 mk. at 2600 feet, and decreased approximately 1 mk. for every 500-foot elevation to an LD_{100} of 15 mk. at 6500 feet.

In studies upon Zuni prairie dogs, the season has been found to affect the toxicity, possibly because of the differ-

Tests by Moore on 482 Columbian ground squirrels showed definite variations in susceptibility to strychnine with

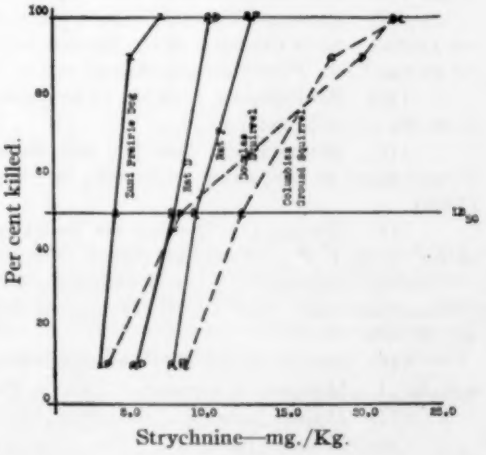

Fig. 4.—Toxicity of strychnine to rodents—oral administration—mg./Kg.

ence in tannin content of the food. In the spring the LD_{100} was 7 mk., in the fall, 4 mk. In these various tests, at various altitudes, and with animals on various diets, however, the response to strychnine has been found to follow an S-shape curve, whether considering the convulsant or the fatal dose.

CONCLUSIONS.

1. The standard curve is useful in recording the relation between dose and effect.

2. Most accurate results are obtained in determining those doses that produce desired responses in half of the animals tested.

3. By using a subscript before the statement of effect to indicate the number of animals employed, and another after it to indicate the degree of response used as a criterion ($_nED_{\%}$), drug action may be quantitatively recorded with maximum convenience and minimum labor.

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CYANIDE POISONING AND ITS TREATMENT.*,[1,2]

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MORTALITY STATISTICS.

Cyanide poisoning is less frequent than mercury or strychnine poisoning, although during recent years the death rate from cyanide poisoning has been increasing. In Table I it will be seen that in the United States Registration Area there were 134 deaths from cyanide poisoning in 1930, and 243, 408 and 416 in 1931,

TABLE I.—MORTALITY STATISTICS FROM CYANIDE POISONING.**

Locality.	Population (1930 Census).	Total Number of Deaths. 1922.	1923.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
U. S. Registration Area	122,775,046	102	113	79	84	108	141	134	243	408	416	..*
New York City	6,930,446	...*	...*	14	11	23	21	34	16	42	35	27
Chicago	3,376,438	...*	...*	3	8	14	4	12	16	25	17	6
Philadelphia	1,950,961	...*	...*	2	2	1	3	0	3	4	3	..*
Detroit	1,568,662	...*	...*	2	0	6	2	7	5	15	11	5
Los Angeles	1,238,048	...*	...*	12	14	19	14	18	23	34	33	25
Cleveland	900,429	...*	...*	1	0	3	2	0	1	4	6	1
Saint Louis	821,960	...*	...*	6	2	6	2	7	9	8	6	2
Baltimore	804,874	...*	...*	1	2	1	5	3	2	5	1	1
Boston	781,188	...*	...*	0	6	2	0	3	8	7	3	8
Pittsburgh	669,817	...*	...*	1	1	2	1	2	5	3	1	1
San Francisco	634,394	...*	...*	9	9	8	10	11	12	21	22	23

* Data not available.

** In the compilation of this Table, we were greatly assisted by Dr. T. F. Murphy, Chief Statistician for Vital Statistics, Bureau of Census, Department of Commerce, Washington, who generously turned over to us all the data which he has collected with meticulous care. Our indebtedness must also be acknowledged to Doctors J. C. Geiger, Director of the Department of Public Health, City and County of San Francisco; Herman N. Bundesen, President of the Board

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[1] From the Lilly Research Laboratories, Indianapolis.

[2] Scientific Section, A. PH. A., Portland meeting, 1935.

of Health, City of Chicago; W. Thurber Fales, Director of the Bureau of Vital Statistics, Health Department, City of Baltimore; Thomas J. Duffield, Registrar of Records, Department of Health, City of New York; G. Arthur Blakeslee, Director of the Bureau of Vital Statistics, Department of Health, City of Detroit; Joseph W. Monahan, Deputy Commissioner, Health Department, City of Boston, and to health officers of other cities, for their assistance in giving us the figures for 1934. The figures for New York City as given by Dr. Murphy are uniformly lower than those recorded in the office of the Chief Medical Examiner of the City of New York as reported by Gettler and St. George (14).

1932 and 1933, respectively. There was a similar increase in most large cities during the same period. Whether or not it was due to the economic depression is a matter for speculation. The mortality rate from cyanide poisoning in urban areas does not appear always to depend upon the size of the population. For example, San Francisco with a population of 634,394 (1930 census) has a total number of deaths comparable to that of Chicago, the population of which is 3,376,438. Similarly, Los Angeles has a relatively high death rate from the same cause.

SOURCES OF CYANIDE POISONING.

1.	Suicidal	
2.	Occupational	Fumigation of ships and houses to kill vermin Photography Electroplating Gilding Metallurgy
3.	Accidental	Cyanide compounds Bitter almonds (*Amygdalus communis*) Arrow grass (*Triglochin maritima*) Chokecherry (*Prunus virginiana*) Certain mushrooms (*Marasmus, Clitocybe*).
4.	Homicidal	

In general, over 90 per cent of the cases of cyanide poisoning are suicidal in nature. Owing to the rigid precautionary measures, death seldom occurs in those places where large quantities of cyanides are handled daily, such as the gold or iron mines, cyanide factories, etc.

In the western states, there are several cyanogenetic plants, chiefly the arrow grass and the chokecherry, which have caused annually heavy losses of live stock. The following interesting account given by Professor B. T. Simms, Oregon State Agricultural College, Corvallis, in a private communication to the authors may be cited:

"You might be interested to know that this type of poisoning (cyanide) has caused rather serious losses in live stock here in Oregon. The common chokecherry has perhaps been the offending plant in the majority of cases. One rancher lost 171 sheep during one night last summer from this plant. Records show that more than 1500 sheep have died in that one area from chokecherry poisoning during the past four years."

DIAGNOSIS.

The diagnosis of cyanide poisoning in men can be easily made if the physician keeps in mind the following points:

1. Personal history.
2. Occupational history.
3. Sudden illness.

4. Early unconsciousness.
5. Characteristic odor of breath (smell of "oil of bitter almonds").
6. Rapid and deep respiration in early stages of intoxication.
7. Convulsions, frequently with involuntary passage of urine and feces. These are followed by depression and paralysis.
8. Cyanosis.
9. Presence of a cyanide container.
10. Positive tests for cyanide in the stomach contents or blood.

CRUCIAL TESTS IMPORTANT FOR EXPERT TESTIMONY.

If a person is poisoned during fumigation, a sample of his blood, 10 to 20 cc., should be drawn. If a person is suspected to have taken poison by mouth, his stomach contents should be evacuated by a stomach tube. If the victim is already dead, the gastric contents should be saved and the liver and kidneys should be removed and analyzed as quickly as possible. It is imperative that the specimens be taken before the body is embalmed. The formaldehyde of embalming fluid reacts quickly with cyanides to form glycollic acid which does not give the chemical reactions characteristic of hydrocyanic acid or its salts. To isolate hydrocyanic acid, the blood, stomach contents or the minced organ, such as the liver or kidney, is definitely acidified with tartaric acid, and subjected to distillation, the poisonous gas being collected in a narrow-mouthed flask. The distillate may be used for various tests.

1. Schönbein's test as modified by Sundberg (1).

Reagents needed: Gum guaiac, 0.2 per cent in alcohol; copper sulphate, 0.1 per cent; and tartaric acid.

Procedure: Place the suspected fluid in a flask, and acidify with tartaric acid. Wet a strip of filter paper with a mixture of guaiac and copper sulphate in the proportion of 10:3, and suspend it in the flask with a cork. Heat the contents on a water-bath.

Interpretation of results: A blue color indicates a positive test. The reaction is not specific but very sensitive.

2. Sulphocyanate test.

Reagents needed: Yellow ammonium sulphide solution; hydrochloric acid, 1 per cent; and ferric chloride, 1 per cent.

Procedure: Add to the distillate yellow ammonium sulphide, evaporate the mixture to dryness, and dissolve the residue in hydrochloric acid. Warm, filter and add ferric chloride.

Interpretation of results: A red color soluble in ether constitutes a positive test. The sensitivity of this reaction is 1:4,000,000.

3. Prussian blue test.

Reagents needed: Ferrous sulphate, 1.5 per cent; ferric chloride, 10 per cent; hydrochloric acid, 10 per cent; and sodium hydroxide, 10 per cent.

Procedure: Alkalinize the suspected fluid with 2 drops of sodium hydroxide, and add to it 2 cc. of ferrous sulphate solution and 1 cc. of ferric chloride. Warm the mixture and cautiously acidify with hydrochloric acid but avoid a great excess.

Interpretation of results: A blue precipitate indicates the presence of hydrocyanic acid. The sensitivity of this test is 1:50,000.

4. U. S. P. method (quantitative).

Reagents needed: Ammonia water, 10 per cent; potassium iodide, $N/1$; and silver nitrate, $N/20$.

Procedure: Treat an aliquot portion of 25 cc. of the suspected fluid with 4 cc. of ammonia water and 3 drops of potassium iodide solution, and titrate with $N/20$ silver nitrate until a permanent turbidity of silver iodide appears.

Calculations: Each cc. of $N/20$ $AgNO_3$ represents 6.5 mg. of KCN, or 7.7 mg. of HCN.

Equally simple and accurate is the gravimetric method for the determination of hydro-

cyanic acid. This involves the steam distillation of the material acidified with tartaric acid. The distillate is received in a beaker containing an excess of $AgNO_3$. The precipitated AgCN is filtered on a tared Gooch crucible and weighed. From the weight of AgCN, the amount of HCN or cyanide salt may be calculated.

5. Smith's isopurpurate method (quantitative for small amounts) (2).

Reagents needed: Picric acid, saturated solution; sodium carbonate, 5 per cent; hydrochloric acid, 10 per cent; and potassium cyanide, $N/500$.

Procedure: Into a test-tube graduated to 25 cc. are pipetted 3 cc. of picric acid solution, 1 cc. of sodium carbonate solution and 1 cc. of the solution to be tested. Warm the mixture on a water-bath. Upon cooling, dilute with water to the mark. Compare the reddish brown color in a colorimeter with that of the standard, prepared in an identical manner, using 1 cc. of $N/500$ KCN.

Calculation: The total amount in the specimen as KCN in mg. =

$$\frac{0.13 \times \text{Reading of Standard} \times \text{Volume in cc.}}{\text{Reading of Unknown}}$$

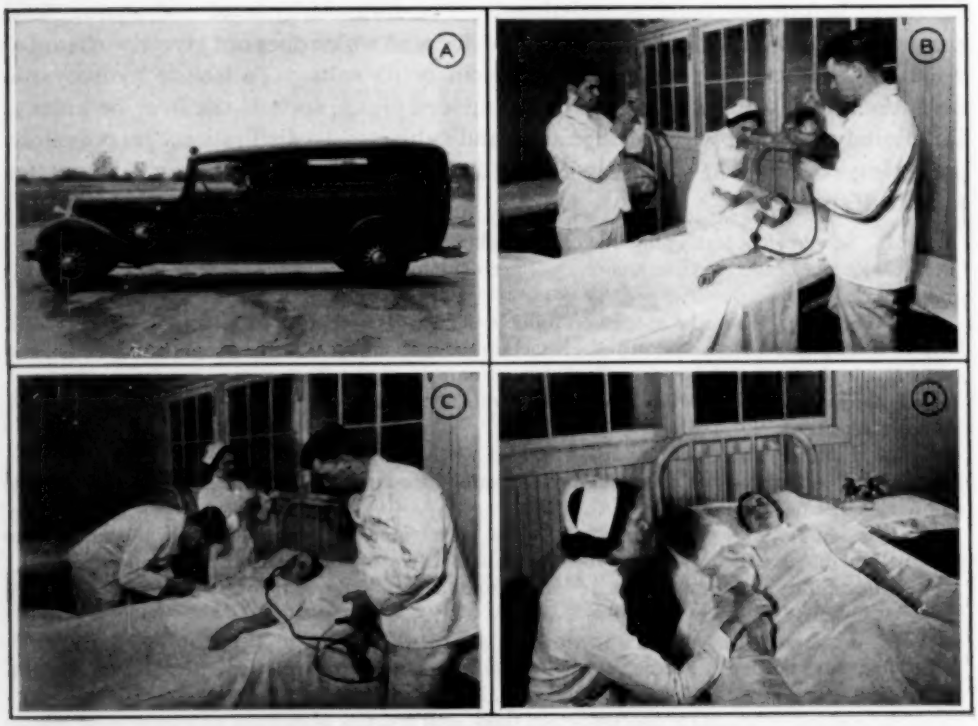

Fig. 1.—Suggestion for managing a case of Cyanide Poisoning. A. The antidote kit should be installed in the ambulance or any place that is most convenient. B, C and D. . Showing steps of administering the treatment.

NEW METHOD OF TREATMENT.

The method to be advocated depends upon Hug's and the authors' laboratory work previously published (3), (4). The antidote chiefly consists of a combination of sodium nitrite and sodium thiosulphate, injected intravenously one after the other. Such a combination can detoxify 20 minimal lethal doses of sodium cyanide in dogs, and is ten times as effective as methylene blue. To expedite the treatment,

amyl nitrite is also used by inhalation. The recommended dose for sodium nitrite is 0.3 Gm. in 10 cc. of water (3 per cent), and that for sodium thiosulphate 25 Gm. in 50 cc. of water (50 per cent), although an amount of 12.5 Gm. in the same volume of water (25 per cent) is frequently enough. In cases of relapses, one-half of the quantity of each should be repeated. So far, three cases of severe cyanide poisoning have been successfully treated with this procedure: two by Viana, Cagnoli and Cendan (5) and the third by Kempf and Richey (6). All three patients recovered, although they had swallowed large amounts of potassium cyanide. The validity of the laboratory results has therefore been clinically confirmed.

It must be pointed out here that the antidotal action of amyl nitrite against cyanide was first demonstrated by Pedigo (7), that of sodium nitrite by Mladoveanu and Gheorghiu (8), and that of sodium thiosulphate by Lang (9). It is the combination therapy that is of recent development.

In order to make the treatment most effective, it is suggested that a kit containing 12 pearls of amyl nitrite, 2 ampuls of sodium nitrite, 2 ampuls of sodium thiosulphate, 2 sterile syringes, 10- and 50-cc. sizes, respectively, 1 file and 1 stomach tube be installed in the ambulance, as is practiced at the Indianapolis City Hospital (Fig. 1A), or in any place where it is most easily accessible. These ampuls have proved to be stable for more than a year with appropriate preservatives and the usual precaution. A team of three individuals is necessary for the best management of a case of cyanide poisoning. In step 1 (Fig. 1B), the physician in charge loads his 10-cc. syringe with sodium nitrite, assistant No. 1 washes out the patient's stomach, and assistant No. 2 initiates the treatment by giving inhalation of amyl nitrite. In step 2 (Fig. 1C), the physician injects sodium nitrite by vein, assistant No. 1 finishes washing the stomach, and assistant No. 2 withdraws the amyl nitrite and loads the 50-cc. syringe with sodium thiosulphate. In step 3, the patient should be watched for 24 to 48 hours after the completion of the thiosulphate injection by the physician. If poisoning results from fumigation, gastric lavage is of course not necessary.

The rapidity of death from cyanide poisoning has been justly emphasized in teaching and textbooks, for most patients do die within 30 to 60 minutes. On the other hand, one must also remember that many others may linger for several hours. Doctor G. F. Kempf of the Indianapolis City Hospital showed us the record of a man poisoned with hydrocyanic acid gas in fumigation. The victim did not die instantly but lived a little more than three hours. This happened in 1928. Oxygen therapy and stimulants were the only measures employed. Hanzlik and Richardson (10) adequately state "that clinical cyanide poisoning is not always as rapidly fatal as may be imagined from animal experiments or textbook statements. There is generally considerable cyanosis in man, and symptoms or unconsciousness may be present for two or three hours, which ordinarily will be ample time for administering treatments suggested." The combined therapy with sodium nitrite and sodium thiosulphate has saved dogs even after their respiration has ceased. It is reasonable to assume that this also holds true in men. As long as the victim's heart still beats, the clinician should consider the case hopeful and treat it without delay.

Clawson, Bunyea and Cough (11), (12), (13) conducted numerous experiments in sheep and cattle, and clearly demonstrated that the same method of treatment can be applied to live stock poisoned by cyanogenetic plants.

SUMMARY.

This paper is a general but brief résumé of cyanide poisoning. It deals with the mortality statistics, sources of poisoning, the diagnosis, crucial tests for legal pur-

poses, and the treatment. The new antidote advocated chiefly consists of a combination of sodium nitrite and sodium thiosulphate. Precise instructions as to how a case of cyanide poisoning should be managed are given.

The authors are indebted to Dr. Clarence W. Muehlberger, Cook County Coroner's Toxicologist and Assistant Professor of Toxicology and Pharmacology, Northwestern University Medical School, Chicago; to Dr. R. N. Harger, Professor of Biochemistry and Toxicology, Indiana University Medical School, and to Dr. Charles L. Rouiller, Chemist, Edgewood Arsenal, Maryland, for their suggestions and criticisms in the preparation of this manuscript.

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CARBO ACTIVATUS.*,[1]

BY JOSEPH ROSIN,[2] GEO D. BEAL[3] AND CHESTER R. SZALKOWSKI.[4]

The demand on the part of the medical profession for a charcoal superior in adsorptive powers to Carbo Ligni U. S. P. X culminated in instructions from the present Sub-committee on Scope to admit a carbon from any source, standardized for its adsorption potency.

Decolorizing carbons have, during the past twenty years, assumed a prominent position both in industry and in the chemical laboratory. Such carbons have had their decolorizing powers greatly beneficiated by chemical treatment, and it is likely that such beneficiation received its greatest impulse during the late war in the production of adsorbent carbon for gas mask canisters.

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* Section on Practical Pharmacy and Dispensing, A. PH. A., Portland meeting, 1935.

[1] Contribution from Merck and Company, Inc., and Mellon Institute of Industrial Research. Published by permission of the Chairman, Committee of Revision, United States Pharmacopœia.

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During the past few years, more thoughtful physicians and pharmacists have experimented with activated carbons for internal medication with a considerable degree of success. Many theories and counter-theories have been evolved, and some have denied that charcoal could have any place in medicine. Clinical experience has triumphed, however, and to-day there is a growing interest in the use of adsorptive agents in medication.

Adsorbent carbons may be produced by the charring of different forms of organic matter. Among these are wood, bone, blood and various industrial wastes. During the past few years one of the most promising has been produced by carbonizing sulphite waste liquor from the pulping of wood for paper. Mere carbonization, as a rule, is not sufficient, so that activation is resorted to, which usually involves some sort of chemical treatment. Mystery surrounds some of these processes, while others are carefully protected by patent, so that a bibliography of activation methods would be out of place here.

Having in mind some of the chemical treatments that have been proposed for activation, we have paid particular attention to chemical impurities in the carbon, and tests for purity have assumed an importance exceeded only by the evaluation of adsorptive properties. Tests for the determination of the purity, *i. e.*, freedom from toxic or inert substances, are based upon those commonly applied for these same substances, modified in some instances to suit the combination in which these agents may be found. These tests may be quickly summarized as follows:

The loss on drying at 120° C., *i. e.*, moisture, does not exceed 15 per cent.

The ash, obtained upon ignition in a platinum crucible, does not exceed 4 per cent.

The acid-soluble substance in 1 Gm., found by boiling the carbon with 1 to 4 hydrochloric acid and determining the sulphated ash in the extract, does not exceed 0.035 Gm.

The carbon contains no coloring principles soluble in boiling normal sodium hydroxide.

Upon boiling 3 Gm. of carbon with 60 cc. of distilled water and filtering, the filtrate is colorless and neutral to litmus, and 10-cc. portions of the filtrate contain no more chloride than 1.5 cc. of fiftieth-normal hydrochloric acid and no more sulphate than 1 cc. of fiftieth-normal sulphuric acid.

The carbon yields no hydrogen sulphide on boiling with hydrochloric acid, nor hydrocyanic acid on distilling with tartaric acid.

A solution prepared by the combined solvent action of diluted hydrochloric acid and bromine water fails to respond to the usual tests for heavy metals.

These tests, however important they may be in demonstrating the harmlessness of the carbon on internal administration, play no part in determining the possible therapeutic efficiency of the material.

The German Pharmacopœia is the only one that to this time has made any determined effort to provide a thoroughly adsorbent carbon. Reliance has been placed in the adsorption of methylene blue and of mercuric chloride. In the first instance it is directed to add 25 cc. of methylene blue solution (0.15 Gm. in 100 cc. of water) to 0.1 Gm. of carbon that has been dried at 120° C. and finely powdered. It is expected that this volume of solution will be decolorized, so it is directed to add further 5-cc. portions of methylene blue until no more decolorization is obtained.

At least 35 cc. of methylene blue solution must be required to produce a blue color perceptible after five minutes' shaking. This indicates an adsorption capacity for 0.525 Gm. of methylene blue per Gm. of carbon.

The requirement of the Swiss Pharmacopœia is that 0.2 Gm. of dried adsorbent carbon must decolorize 32 cc. of methylene blue solution, of the above concentration, during five minutes' shaking. This amounts to an adsorption capacity for 0.24 Gm. of methylene blue per Gm. of carbon.

Our first experiences in applying the methylene blue adsorption test to activated carbon were quite unsatisfactory. The finer particles of carbon resist sedimentation, so that we had great difficulty in determining the end-point with any degree of delicacy, due to the obscuring of a faint blue color by the suspended matter. Even when sharp end-points were obtained, the best carbons failed by more than 30 per cent of having the required power of the German Pharmacopœia. This did not seem to be within reason, since these carbons were industrial products treated to enhance their decolorizing properties.

Saturation of the carbon is best obtained by reliance on the mass effect of an excess of dyestuff. Several procedures for the quantitative determination of methylene blue being available, we used our own modification of the iodometric method to determine such an excess after treatment with the carbon. When tenth-normal iodine is added to an aqueous solution of methylene blue containing 3 per cent or more of sodium acetate as a buffer a periodide of methylene blue is precipitated, and the consumption of iodine, determined by titration of the filtrate with sodium thiosulphate, is 6 atoms for each molecule of methylene blue.

The method finally decided upon reads as follows:

"Dissolve 0.25 Gm. of methylthionine chloride (methylene blue) in enough distilled water to make 250 cc. of solution. Measure exactly 50 cc. of the solution, at 25° C., into each of two 100-cc. glass-stoppered flasks. To one flask add exactly 0.25 Gm. of Activated Charcoal, stopper the flask and shake vigorously for five minutes. Filter the contents of each flask through a filter which has not been previously moistened, rejecting the first 20 cc. of each filtrate. Measure exactly 25 cc. of each remaining filtrate into 250-cc. volumetric flasks. Add to each flask 50 cc. of a solution of sodium acetate (1 in 10) and mix thoroughly, then add from a burette 35 cc. of tenth-normal iodine, keeping the mixture in constant rotation. Stopper the flasks and allow them to stand for fifty minutes, shaking vigorously at intervals of ten minutes. Dilute each mixture to exactly 250 cc. with distilled water, mix thoroughly, allow to stand for ten minutes and filter each through a filter that has not been previously moistened, rejecting the first 30 cc. of each filtrate. Determine the excess of iodine in 100 cc. of each filtrate by titration with tenth-normal sodium thiosulphate. The difference between the two titrations, multiplied by 5, amounts to not less than 3.5."

One cc. of tenth-normal iodine is equivalent to 0.005328 Gm. of methylthionine chloride. Sixteen samples of carbon, including wood charcoal, sponge charcoal, bone-black and activated carbons, adsorbed methylthionine chloride equivalent to from 0.505 to 4.789 cc. of tenth-normal iodine per 0.25 Gm. of carbon, corresponding to from 1.08 to 10.02 per cent of the weight of activated carbon. Carbon, in order to satisfy the U. S. P. monograph, must adsorb approximately 7.5 per cent of methylthionine chloride.

The German Pharmacopœia also determines the degree of adsorption of mercuric chloride by activated carbon.

Two-tenths Gm. of dried and finely sifted carbon is shaken for five minutes with 200 cc. of a 0.3 per cent solution of mercuric chloride and then filtered through a previously unmoistened filter, rejecting the first 25 cc. 100 cc. of filtrate is then treated with 25 cc. of tenth-normal sodium arsenite and 3 Gm. of potassium bicarbonate, heating the mixture to boiling for five minutes. After cooling one adds 3 cc. of diluted hydrochloric acid and titrates with tenth-normal iodine The titration must require at least 8.8 cc. of tenth-normal iodine, so that at most 16.2 cc. of tenth-normal sodium arsenite will be consumed in the reduction of the unadsorbed mercuric chloride. The minimum adsorption required is 0.08 Gm. of mercuric chloride per 0.1 Gm. of carbon.

Careful consideration was given to the mercuric chloride method, and quite satisfactory results were obtained. The determination of the unadsorbed mercury requires a somewhat roundabout procedure, involving the use of two standard solutions, sodium arsenite and iodine, and intermediate boiling and cooling. For these reasons, and because the adsorption of metallic salts is not a normal use of activated carbon, the method was not recommended for adoption by the U. S. P. XI.

With the adsorption of methylene blue representing one type of toxin elimination by the use of activated carbon, a study was made of the use of more definite organic bases as standardizing agents. Several alkaloids were tried for this purpose, but strychnine was selected as the reagent to be used, both because of its rapid and uniform adsorption and because of the availability of positive precipitation reactions for small amounts of strychnine. Directions for the test as adopted for U. S. P. XI are as follows:

"Dissolve 0.1 Gm. of strychnine sulphate in 50 cc. of distilled water, add 1 Gm. of Activated Charcoal, shake the mixture vigorously for five minutes, filter immediately through a dry filter, and reject the first 20 cc. of filtrate. The addition of 1 drop of hydrochloric acid and 5 drops of mercuric potassium iodide T.S. to a 10-cc. portion of the subsequent filtrate produces no turbidity."

One of the most important uses of activated charcoal is believed to be the adsorption of gaseous products of fermentation or putrefaction. Attempts were first made at the standardization of its adsorptive capacity for carbon dioxide. The method used consisted of passing the gas into an aqueous suspension and determining the gain in weight. Concordant results were not obtained, and it was also believed that the presence of carbonate ash might produce a false adsorptive power. Experiments leading to the measurement of the adsorption of hydrogen sulphide in gaseous form were more promising, and led to the final adoption of a method for U. S. P. XI, reading as follows:

"Into each of two flasks place 185 cc. of distilled water and 5 cc. of glacial acetic acid and mix thoroughly. By means of a pipette add to each flask 10 cc. of a solution of 2.5 Gm. of crystallized sodium sulphide in 100 cc. of distilled water, placing the tip of the pipette at the bottom of the flask during delivery. Rotate the flask gently for thirty seconds, add to one of the flasks 1 Gm. of Activated Charcoal, stopper the flasks and shake them for five minutes. Filter the contents of each flask through a filter that has not been previously moistened, rejecting the first 20 cc. of each filtrate. Titrate 100 cc. of each subsequent filtrate with tenth-normal iodine, using starch T.S. as the indicator. The filtrate from the Activated Charcoal consumes at least 5 cc. less of tenth-normal iodine than the filtrate from the solution to which no Activated Charcoal was added."

This amounts to a minimum adsorption of 0.01704 Gm. of hydrogen sulphide per Gm. of charcoal.

A summation of the application of the qualitative and quantitative tests mentioned herein is given in the following table.

TABLE I.—RESPONSE OF CHARCOALS TO THE PROPOSED TESTS TO BE INCLUDED IN U. S. P. XI.

Sample.	Acids and Alkalies.	Cl′.	SO_4''.	S″.	Complete Carbonization. Cn′.		Heavy Metals.	Ash %.	Acid Sol. %.	Moisture %.	Strychnine.	H_2S Cc. N/10 I.	Methylene Blue Cc. N/10 I.
A*	−	−	−	−	−	−	±	2.46	1.06	8.13	−	9.10	4.70
B*	−	−	−	−	−	−	−	1.87	0.70	10.03	−	6.70	4.80
C	−	−	−	−	−	−	−	3.66	3.22	9.15	−	5.30	3.43
D*	−	−	−	−	−	−	−	3.46	1.66	8.96	−	5.40	4.46
E	−	−	−	−	−	+	−	3.81	3.03	3.57	+	3.86	0.66
F	−	−	−	−	−	−	−	3.24	1.39	3.06	−	5.50	2.83
G	+	+	+	+	+	+	+	56.2	77.24	3.57	+	5.10	1.16
H	+	+	+	+	+	+	+	42.1	60.14	3.54	+	4.88	1.41
I	+	−	+	−	−	+	+	19.57	5.59	4.07	+	4.06	0.91
J	−	−	−	+	+	+	+	44.93	77.64	4.08	+	4.50	0.51
K	−	−	−	−	−	−	+	2.9	1.84	4.95	+	4.06	1.41
L	+	+	+	−	+	+	+	36.61	40.76	4.97	+	5.10	1.52
M	+	−	−	−	−	+	+	5.08	5.15	5.08	+	3.46	1.67
N	+	−	+	−	−	−	+	11.31	1.63	1.83	+	3.86	0.60
O*	−	−	−	−	−	−	−	2.5	2.48	3.55	−	6.70	4.53
P*	−	−	−	−	−	−	−	3.04	2.68	14.40	−	6.10	4.34

* Conforms to U. S. P. monograph.

A—Activated carbon.
B—Activated carbon.
C—Activated carbon.
D—Activated carbon.
E—Willow charcoal.
F—Activated carbon.
G—Bone-black.
H—Bone-black.
I—Wood charcoal.
J—Animal charcoal.
K—Activated carbon.
L—Sponge charcoal.
M—Willow charcoal.
N—Activated charcoal.
O—Activated charcoal (Willow).
P—Activated charcoal (Vegetable).

A room in the shrine to the birth of modern botany.

The home of Carl Linnæus and museum.

AMERICAN SCIENTIFIC CONGRESS.

President Cloyd Heck Marvin, of George Washington University, has been named by President Roosevelt to serve as chairman of the delegation from the United States to the seventh American Scientific Congress, to meet in Mexico City, September 8th to 17th. Two other Washingtonians, Dr. Neil M. Judd of the United States National Museum and Dr. France V. Scholes of the Carnegie Institution of Washington, are members of the delegation. Other members are President Wallace Walter Atwood, of Clark University; Dr. J. McKeen Cattell, editor of *Science;* President Franklin Stewart Harris, of Brigham Young University, and Prof. Edward V. Huntington of Harvard University.

ADDRESS OF THE PRESIDENT OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

BY ROBERT P. FISCHELIS.

Ladies and Gentlemen of the American Pharmaceutical Association:

The duties of the president as provided for in the By-Laws include the preparation of an address to be presented at the first general session of the annual meeting. It is not specified whether this address shall constitute a report of the activities of the president or of the ASSOCIATION, or whether it shall be upon some other subject deemed pertinent to the occasion. Custom has doubtless influenced the decision of former presidents in this regard and we have had, on occasions like this, a series of forceful expressions of conditions in the practice of pharmacy, records of activities pursued during the presidential year and occasional suggestions and recommendations with respect to future activities. At times these suggestions and recommendations have led to the adoption of new policies and procedures which have left their mark upon American Pharmacy. More frequently, perhaps, the suggestions and recommendations have been received with varying degrees of respectful attention, and have been just as respectfully consigned to the limbo of forgotten things. The eighty-third president therefore enters upon the discharge of this duty with no illusions.

ROBERT P. FISCHELIS.

It has always seemed to me somewhat anomalous to have the outgoing president follow the review of activities of his administration with recommendations to be carried out by his successor, when that successor has been elected eight months before taking office and very likely has some ideas of his own as to what should be done. Would it not be more logical for the president-elect to be given an opportunity to submit a program for the ensuing year and have that program passed upon by the convention and then, while president, take the lead in carrying out the approved suggestions rather than to inherit what is left of a program that may be submitted by an outgoing president?

If the president-elect submits the program he is more apt to insist upon its careful and immediate consideration because he has a year ahead of him in which to act. The outgoing president submits his program three days before he leaves office and he knows that whether it is accepted or rejected his official responsibility in connection with it ceases within three days. Unless there is unusual coördination between the outgoing and incoming presidents, it is my judgment that the ASSOCIATION loses a great deal by the present arrangement. The unusual coördination referred to can take place only when the retiring and incoming presidents happen to be so located, geographically, that they can confer frequently. Such a situation is very unusual. I have discussed this matter with various officers of the ASSOCIATION

and there seems to be no objection to the idea of giving the president-elect an opportunity to submit a program at the convention at which he takes office. The only practical difficulty would be presented at the meeting at which the change is to take place. I suggested that I would be willing to give my time this year to the president-elect but it was considered inadvisable by others to inaugurate the plan without approval by the ASSOCIATION. However, we have arranged to give the president-elect such time as he may desire for a message at the final general session of this Convention although this will not allow an opportunity for action upon possible recommendations.

President-elect Costello has wisely pointed out, in connection with this matter, that if the president-elect is to submit his program at the beginning of his administration, we must also make provision for keeping him informed of the work carried on by the organization during the year preceding his incumbency. This would mean that the president-elect should become a member of the Council immediately upon being elected.

ATTITUDE TOWARD THE PRESIDENCY.

It is not difficult to imagine several attitudes toward the administration of this office. If it happens to be occupied by one accustomed to administrative duties, he is apt to look upon the presidency of this ASSOCIATION very much as he would upon the presidency of a business enterprise or institutional activity. Under such circumstances the president would expect to make decisions on matters which arise during his term of office, receive reports of other officers and committees and act upon them in accordance with the expressed policy of the ASSOCIATION, or, if there has been no expression of policy, then upon the best advice obtainable and with the exercise of his own judgment. He would expect to take the initiative in promoting the interests of the ASSOCIATION in its recognized sphere of activity and represent the ASSOCIATION publicly where such representation is in order or essential to its progress.

If the presidency is occupied by one who has been elected because of distinguished scientific or professional attainment, and to whom administrative duties are irksome, he is apt to take the position that such duties should be assumed largely by others and he might confine himself to literal compliance with the By-Laws.

Another attitude which may be taken, regardless of the particular attainments of the occupant of the office, is that the general affairs of the ASSOCIATION are of no particular concern to the president after he has appointed certain committees and that his chief function is to preside at the annual convention and act otherwise very much like an ornamental constitutional monarch, being careful of course not to omit "the speech from the throne."

The more one studies the By-Laws of our ASSOCIATION the more it becomes apparent that the presidency was probably not intended to be a position in which forceful leadership should be exercised and that in furtherance of this policy the possible exercise of such leadership has been surrounded by so many barriers as to discourage a man of ordinary initiative.

If the By-Laws provided for the assumption of leadership by some other

officer, it would be a waste of time to make these remarks about the presidency. The fact is that no single officer of our ASSOCIATION is at present designated as the executive officer. It is, therefore, quite natural for the members of our ASSOCIATION and pharmacists, generally, to think of the presidency of the AMERICAN PHARMACEUTICAL ASSOCIATION in terms of leadership and active administration. Accordingly I have tried, within the limits of my ability, to satisfy the demands of the office as it is conceived by the rank and file of pharmacists, by other professions and by the public.

Naturally I have found it impossible to please everybody. I knew in advance how useless it would be to try to please some, but I have tried to keep before me constantly the cherished ideals of those who vision Pharmacy as essentially a profession of service to humanity. If in so doing I have at times incurred the displeasure of those to whom pharmacy is essentially a source of material profit, I am not greatly disturbed. The results of our efforts speak for themselves and in the words of the immortal Lincoln whose statue, housed in that glorious memorial structure, looks down upon our own building in the City of Washington:

"I do the very best I know how, the very best I can, and I mean to keep doing so till the end; if the end brings me out all right, what is said against me won't amount to anything."

ACTIVITIES AND OBJECTIVES.

We have had a very busy year. The reports of the other officers and committees will give you detailed information of what has been accomplished and what plans are in store for the future. It would be impossible for me to recount in the time available even the high spots of our many and varied activities. However, I am cognizant of the fact that we are meeting in a section of our Country which we have never visited before as an ASSOCIATION. Therefore it may not be amiss to call attention briefly to the fundamental objectives for which our ASSOCIATION was organized and to devote some time to an appraisal of our present activities in the light of these objectives.

The seven objects of the ASSOCIATION as outlined in its Constitution may be briefly stated as follows:

1. To improve and regulate the drug market by preventing importation of inferior, adulterated or deteriorated drugs, and by detecting and exposing home adulterations.
2. To encourage such relations among pharmacists, physicians and the people at large as may promote the public welfare and tend to mutual strength and advantage.
3. To improve the science and art of pharmacy by the diffusion of scientific knowledge among pharmacists, stimulating discovery and invention, encouraging home production and manufacture, fostering a pharmaceutical literature and developing inherent talent among its members.
4. To regulate apprenticeship and employment so as to prevent as far as possible the evils flowing from deficient training in the responsible duties of preparing, dispensing and selling medicines.
5. To suppress empiricism and to restrict the dispensing and the sale of medicines to educated pharmacists.
6. To uphold standards of authority in education and in theory and practice of pharmacy.

7. To create and maintain a code of ethics in keeping with the professional knowledge and function of the pharmacist and designed to protect the public to the highest degree.

If we were to start to-day—eighty-three years after the founders—to lay down a platform upon which American Pharmacy might take its place with other health professions, we could hardly conceive of a more inclusive statement of desirable objectives.

FOOD AND DRUG LEGISLATION.

The first of these objectives has been brought very close to us in the past two or three years because of the endeavor to revise the Federal Food and Drug Act. Pharmacists have been conscious of the need for such revision for many years. The need for some control over the advertising of drugs and medicines by means of radio, newspapers and magazines has become more and more necessary as advertisers have become bolder in their methods and have so far exceeded the bounds of propriety and even decency in their announcements as to call down upon themselves the censure of broadcasting companies and the better class of publications. If truth is important in any field it is so in matters having to do with the public health and especially in expounding the virtues of drugs and medicines.

The proposed food and drug law known as the Copeland bill, which has passed the Senate and is now before the House of Representatives for action, places the control of advertising of foods and drugs in the hands of the Food and Drug Administration. This is as it should be. There has been some agitation to separate the control of advertising from the control of other features governing the manufacture and distribution of drugs and medicines by placing it in charge of the Federal Trade Commission. Such control as is now exercised by the Federal Government over advertising, generally, is in the hands of the Federal Trade Commission. This is so, because this Commission has to do with the control of unfair competition. It has the power to regulate advertising if it involves unfair competition. Thus, if the manufacturer of a brand of aspirin states in his advertising that his product is fresh because of the way in which it is packaged, or that it does not affect the heart, and intimates through his advertising that other brands are not fresh because they are not packed in a certain way, or that they do affect the heart, his competitors may prevail upon the Federal Trade Commission to cite him for unfair competition and to cause him to cease and desist from this practice under penalty of a fine.

The fact that such advertising may have been misleading to the public in so far as therapeutic action is concerned, does not interest the Federal Trade Commission because its function is not to protect the public health, but to protect industry. It would be a calamity if a branch of the Federal Government whose chief function is trade promotion should be entrusted with the control of the advertising of medicines, even though new powers were granted the enforcing agency under the Food and Drug Act. The point of view of a trade promotion bureau and that of a public health agency are so totally different that it is inconceivable that the Congress of the United States should give serious consideration to the pleas of those who would transfer any part of the function having to do with the administration of food and drug laws to a trade agency. I took this position when I appeared before the Senate and House Committees which conducted hearings on the bill.

The necessity for including cosmetics in the regulatory provisions governing the manufacture and distribution of foods and drugs has been apparent for a long time. Pharmacists have known of the danger lurking in the use of certain types of cosmetic preparations and the lack of information available on the label of these products, which have frequently contained poisonous ingredients, has been sufficient to classify many of these products as definitely detrimental to health. This ASSOCIATION is on record as approving the inclusion of the regulation of cosmetics in the Food and Drug Act, and I so informed the Committees of Congress.

The proposed law contains a basic weakness with regard to adulteration. I refer to the so-called "Variation Clause." The bill states that, "No drug shall be deemed to be adulterated under this paragraph because it differs from the standards of strength, quality or purity, therefore set forth in an official compendium, if its standards of strength, quality and purity be plainly stated on its label." Here we have the old policy of *caveat emptor*—let the buyer beware—at its best. Allowing the use of an official name without requiring the product to be of official strength is nullification of the fundamental principle upon which uniformity in drugs and medicines is based. Pharmacopœias were brought into being for the purpose of unifying standards of drugs and the first step toward such unification is an established nomenclature. Tincture Digitalis U. S. P. should mean a product of definite strength from coast to coast. If its standard of strength is not proper let it be changed by the Revision Committee. If several strengths of the tincture are required let them be recognized under official titles but we should not permit the official title to be used for a product that is not of the official strength. The provision of the proposed law which requires only a statement of the standard of strength on a label, if the product differs from the official standard, without indicating how the strength differs from the official standard, opens the door to fraud. This ASSOCIATION is on record against the use of official titles unless products so labeled meet official standards and I so informed the Committees of Congress.

I also took the stand that the request of the Food and Drug Administration for authority to permit unrestricted seizures of shipments of drugs misbranded in such a way as to be grossly deceptive, should be granted. We have been on record for some time in favor of partial formula disclosure. The act provides for partial formula disclosure which is a long step in the right direction, and of course I publicld favored this. The Copeland bill as passed by the Senate and submitted to the House of Representatives is weak in many particulars but as I pointed out in a recent editorial in our own JOURNAL, the time has come to take some definite action so that the element of uncertainty as to future regulation may be removed and the revision of state laws no longer delayed. If enacted in its present form, this proposey law will so vastly improve regulation of the food and drug industries that we are warranted in giving it our approval. It was necessary to spend three days, immediately preceding departure for this meeting, at Washington before the House Sub-Committee which has this measure in charge. The outlook for passage of the bill at this session of the Congress appeared favorable.[1] In dealing with the Food and Drug Legislation it has been very gratifying to have the active and effective support of the American Association of Colleges of Pharmacy.

[1] Adjournment of Congress in August left insufficient time for final action on the bill and it was carried over to the next session.

I have dwelled at length on this phase of our activity because it is without doubt one of the most important factors in the progress of pharmacy and it is a question on which the public interest transcends the private interests of those engaged in the manufacture and distribution of drugs and medicines. In my judgment, we have shown the Committees of Congress and the general public that we recognize this. I do not believe that we could have done so by allowing any other organization to speak for us or by having the representatives of our ASSOCIATION speak for other branches of the drug industry. The situation called for a positive attitude toward this great public question. I did not feel that those who were engaged in the controversies arising out of the drastic food and drug legislation originally proposed and who doubtless rendered a great service in clarifying the issue, were in the best position to meet the new situation. Therefore I assumed personal leadership in the matter. I was well aware of the criticism this might arouse in certain quarters, although I did not expect the low type of personal attack indulged in by some. These are matters that can be attended to after I leave the presidential office. I am certain in my own mind that the position I have taken has brought honor and credit to the AMERICAN PHARMACEUTICAL ASSOCIATION in places where honor and credit mean something to American Pharmacy. I hope you will agree with me and if you do, I ask that you endorse what I have done.

PROFESSIONAL AND PUBLIC RELATIONS.

Our second objective, having to do with professional and public relations, offers a splendid opportunity for a type of leadership which is sorely needed in American Pharmacy to-day. Most assuredly it is the AMERICAN PHARMACEUTICAL ASSOCIATION which should take the initiative in promoting better relations between pharmacists, physicians, dentists and other health workers and with the public.

I wish to call attention to some of our activities and accomplishments in this direction and point to possibilities for future effective work.

In 1931 the ASSOCIATION authorized the appointment of a Committee on Professional Relations. For some reason unknown to me the committee was never appointed. The need for active coöperation with the medical, dental, nursing and other professions along various lines being apparent, I appointed such a committee this year headed by Leonard A. Seltzer of Detroit with Dean Roland T. Lakey as secretary. An immediate need was felt for a representative from each State to coöperate with this committee. It seems to me that the voting delegate from each State Association to our House of Delegates could furnish the proper contact for this Committee with State groups representing the various professions and I so recommend. We now have a number of State Councils or State Conferences of the Allied Medical Professions actively engaged in the study and consideration of professional and economic problems affecting all professions. In some states these conferences are limited to the health professions. In others they include teachers, lawyers and additional groups. To all such Councils or Conferences we can supply helpful information and guidance on pharmaceutical questions.

It is important that our professional relations be governed by sound thinking, plain speaking and effective action. To this end we should be well informed of the views and opinions of other professional groups. The auxiliary committee of State

Delegates can keep the Committee on Professional Relations informed of developments within the states and it, in turn, should study all proposals involving cooperation between the professions in matters affecting public health, medical care, emergency relief, the use of official drugs and the regulation of the professions, and make such recommendations to the ASSOCIATION as may be indicated.

We have endeavored to maintain the most friendly relations with the medical and dental professions. The emergency relief programs of the Federal and State Governments have had a tendency to emphasize the inter-relations of the health professions. The designation of U. S. P., N. F. and special formulary non-proprietary drugs for exclusive use in emergency relief prescribing has given an impetus to prescription writing which requires a high type of pharmaceutical practice. This is in the interest of the patient as well as the professions. The efforts of pharmacists all over the United States in meeting the demand for emergency relief prescription service at reduced fees is to be commended and is an indication to the Government and to the public that we can be depended upon to do our part whenever emergencies arise.

For a number of years the Council on Pharmacy and Chemistry of the American Medical Association has not had in its membership the same quota of pharmacists originally included in its make-up. We can recall with pride the services of Puckner, Wilbert, Hallberg, Kraemer and perhaps others to this very useful agency. It is probable that the organization of a Council or Committee with similar activities by the AMERICAN PHARMACEUTICAL ASSOCIATION was discouraged because American Pharmacy was given representation on the Council on Pharmacy and Chemistry of the American Medical Association. The present policy seems to be not to replace pharmacists removed from the Council by death, with other qualified pharmacists. It does not seem to me that such a policy will be of benefit to the American Medical Association in the long run and it is hoped that when future vacancies on the Council occur, a pharmacist or two will be named as members so that the very important viewpoint of professional pharmacy will not be eliminated from the deliberations of this all-important and extremely useful Council. An effort should also be made to place a pharmacist or two on the Council on Dental Therapeutics. Here we have points of contact between medicine, dentistry and pharmacy through which a very useful service can be rendered by our profession. They should not be overlooked.

It is unfortunate that our official formularies have not made available to physicians a variety of combinations of active drugs with suitable adjuvants and vehicles such as are furnished under various proprietary names and, of course, at proprietary prices. This situation has led to the preparation of various special formularies promulgated by hospital organizations, State and County medical and pharmaceutical societies and is apt to result in a certain amount of confusion especially if such local formularies multiply. The original objective of the United States Pharmacopœia and National Formulary was to bring about uniformity in standards for drugs and formulas. To avoid the confusion existing before these standard works came into being, they must be kept in step with the progress of the times and supply existing needs by means of frequent supplements. Decennial revision is no longer sufficient to meet existing needs. In this connection a way should be found to supply supplements to the official standards, when issued, di-

rectly to all subscribers to the official books, at no addition to the original cost of the books.

Cognizance should also be taken of the recurring agitation as to the constitutionality of the present system of issuing and revising the United States Pharmacopœia and National Formulary. If there is any doubt about the legality of the present method of revision, we have nearly five years before the next decennial revision in which to obtain Congressional action to authorize issuance of these standards by revision committees called into being by the Congress, if that is necessary. Knowing the slow process by which Congressional action is obtained in these matters, we should not delay our efforts to place the revision of these standards on a firm and sound legal foundation.

Our relations with the public have been enhanced considerably through the completion of the headquarters building in Washington, the continued observance of Pharmacy Week and various public contacts by representatives of the professions with civic and public health groups and through the medium of the public press. Our building in Washington attracts the attention of many visitors to the capitol city and provides a tangible expression of the place of the pharmacist in the progress of scientific medical care.

It was my privilege, as president of our ASSOCIATION, to inaugurate Pharmacy Week last October with a fifteen-minute message from Station WEAF, Radio City, New York, over a network of the National Broadcasting Company. Reports indicate that the professional window displays made by pharmacists throughout the United States and other features of the observance of Pharmacy Week were of a high order. However, there has been considerable complaint of the manner in which some radio advertisers of drug products have sought to tie up their sales talks with the professional features of Pharmacy Week. Time donated by radio advertisers for purely professional messages during Pharmacy Week constitutes a real contribution to the purpose of this "Week." However, when a purely commercial broadcast is connected with a Pharmacy Week message, it defeats the object of the "Week" which is not to urge people to buy medicines or toilet articles but to be reminded of the professional services rendered by the pharmacist. Radio advertisers who unite their advertising with Pharmacy Week messages are contributing nothing to this movement. On the contrary, they are selfishly taking something away from it.

Throughout the year newspapers, pharmaceutical journals and other publications, including the official journal of the American Association for the Advancement of Science, have carried messages, articles and reports of addresses by your officers and Committee members.

The economic phases of the practice of medicine are occupying the best minds among physicians as well as social workers. Dr. A. C. Christie in his recent book on the "Economic Problems of Medicine" makes the following significant statement: "The doctor entering private practice, finds that medicine is not only a profession, but a business as well." The public is conscious of the fact that there is a business phase to medical care. It has no special interest in regulating the professional phases of medical practice, but it is claiming more and more of a voice in the regulation of its business phases. This development cannot be stopped by ignoring it and the medical profession is finally, although with evident reluctance, making an

effort to meet the situation which has caused the outcry against high costs of medical care. We should watch developments in this field with great care and anticipate probable trends with a constructive program of our own. Such things cannot be developed over night. When the Federal Committee on Economic Security had in process of development what has since become the Social Security Act, we kept in very close touch with the program. State Associations were asked to gather information and transmit it to our Washington office. We were finally informed that the immediate plans of the Government contemplated no application of the insurance principle to the furnishing of drugs and that the per capita expenditure for necessary drugs and medicines does not reach a figure which warrants elimination of the retail pharmacy as a source of supply for drugs under any scheme of socialization of medical services.

Emergency Relief Administrations and other organizations engaged in providing medical care find the many easily accessible pharmacies a convenience in supplying necessary drugs and related items. Hence the agitation for centralized drug dispensaries manifested occasionally in some quarters has made little or no headway.

While there is no justification for the concentration of great numbers of pharmacies or drug stores in centers of population which can be served as well or better by half the number actually available, there is something to be said for a logical distribution of pharmacies so as to maintain suitable and convenient pharmaceutical service to the public. In pharmacy as in medicine and dentistry it is essential that the personal relations between those giving professional services and those receiving them be maintained.

PUBLICATION PROGRAM.

Our third objective referring to the diffusion of scientific knowledge and fostering pharmaceutical literature is being cared for through our JOURNAL, the National Formulary, the Recipe Book, occasional bulletins and special publications issued from time to time.

In my correspondence with the membership and in my personal contacts with them, I have gained the distinct impression that our present JOURNAL does not meet the needs of the average pharmacist in a number of particulars. There is also some dissatisfaction on the part of those wishing to use the JOURNAL as a medium for the publication of lengthy scientific papers. The mere statement of these facts is sufficient to call attention to the difficult problem faced by the Editor. The ASSOCIATION is on record in favor of establishing a second monthly publication designed to interest and serve the retail pharmacist. This matter has had very careful consideration in the Council and it is believed that the interests of the ASSOCIATION will be served best if the present JOURNAL is gradually converted into an exclusively scientific publication carrying the monthly abstracts of pharmaceutical literature, papers of sufficient scientific value to warrant giving them a permanent place in the literature and editorials relating to the development of professional pharmacy. American pharmacy needs such a publication. The general information now carried in the JOURNAL, together with articles of special interest to pharmacists operating retail establishments or prescription shops and editorials relating to the general objectives of the ASSOCIATION and defining its policies would be published in the new JOURNAL. Thus the ASSOCIATION would fill a long-felt need in bringing its activities closer to the average retailer.

With the publication of the 1934 YEAR BOOK this series of volumes reporting the progress of pharmacy will come to an end in accordance with the action taken by the ASSOCIATION some time ago. In place of the annual publication of abstracts in the YEAR BOOK, monthly instalments of these abstracts will appear in the JOURNAL. This improved service to the members of the ASSOCIATION has been in effect since March of this year. Editor DuMez and his collaborators are to be commended for the promptness with which abstracts of pharmaceutical literature are now reaching us, and Editor Eberle has made arrangements to segregate the abstracts in the JOURNAL in such a manner as to make them available for separate binding at the end of the year if that is desired. Many of us will miss the annual YEAR BOOKS even as many others of a previous generation missed the annual volume of Proceedings, but the needs of the day are such as to require prompt publication of proceedings, abstracts and other material, and to this end monthly publication is much more serviceable. Further reference to the publication program will be made in another part of this address.

PRACTICAL TRAINING.

Our fourth objective bearing upon proper conditions of apprenticeship and employment so as to prevent the evils flowing from deficient training in responsible duties in preparing and selling medicine is, at this time, of deep concern to the profession. The advent of the four-year course in pharmacy has focused attention upon the necessity for the revision of the practical experience requirement. I do not intend to recommend any specific method of providing the practical training which all pharmacists need before entering upon their profession. Nor do I intend to condemn any method which has been proposed for providing necessary practical training in advance of a trial of the method. I believe that practicing pharmacists have a certain responsibility in connection with the matter. Colleges of Pharmacy are concerned in so far as the coördination of their courses with the practical experience requirement is essential. The problem is of chief concern to the Boards of Pharmacy which are responsible to the public. It is to be hoped that the Boards will rise to their responsibility in this and other matters. We have in the United States, forty-eight states which are also forty-eight laboratories in which we should be permitted to do some experimenting. To arbitrarily attempt to stifle the initiative of any state in this matter is not rendering a service to pharmacy. Fortunately, we have Boards of Pharmacy which are willing to do pioneer work in this field. They should be encouraged in their attempt to find solutions to our problems.

DRUG DISPENSING RESTRICTED TO PHARMACISTS.

Our fifth objective refers to restriction of the dispensing and sale of medicines to pharmacists. We have made many attempts by legislation to attain this objective. In spite of the fact that it is entirely logical, and in the interest of the public health and welfare, to require that all drugs and medicine shall be dispensed under the supervision of registered pharmacists, we have not been able in eighty-three years to come as close to this objective as the public interest demands. The tendency on the part of pharmacists, is to condemn legislators for failure to so revise pharmaceutical laws as to give the public this necessary protection. The fact

is that the members of our own industry are probably more responsible for our failure to reach this objective. I am not basing this statement on guess-work. It is perfectly apparent to anyone who has had legislative experience that manufacturing interests invariably block state legislation which tends to restrict the sale of drugs and medicines to registered pharmacists.

At the 1934 meeting of the National Drug Trade Conference, I presented a resolution asking the conference to go on record in favor of restricting the sale of drugs to drug stores. The resolution was referred to a committee consisting of one member from each of the eight associations participating in this meeting. They represented the three drug manufacturing associations, one wholesale association, our ASSOCIATION, the National Association of Retail Druggists and the association of colleges and association of boards. The committee voted five to three in favor of the resolution. The three negative votes were cast by the three associations of manufacturers. Undoubtedly, there are among the better class of drug manufacturers, some who would be willing to see their products marketed exclusively through the drug store. However, as a class they do not desire to restrict distribution of their products to registered pharmacists. How can we expect legislators and laymen to support the principle that all drugs should be supplied under the supervision of registered pharmacists if members of the drug industry are opposed to such a procedure? It is necessary for us as the professional association of pharmacy to educate members of our own industry on this question. With the increasing amount of radio and magazine advertising of packaged drugs, it is not difficult to visualize the possibility that pharmacists may be eliminated as important factors in the distribution of drugs and medicines. That may not be the immediate objective of drug manufacturers, but it is conceivable that if their volume of sales can be increased through other channels of distribution, some of them will not hesitate to use these channels to a greater degree and others will follow if the plan is successful. The medical profession is just as deeply concerned in this situation as we are. It is not a far cry from general distribution of drugs and medicines through non-professional outlets, by means of modern advertising facilities to the diagnosis and treatment of disease by the same methods. As a matter of fact, it has been done and is being done. In self defense as well as in the public interest, the professions should endeavor to curb this trend.

PHARMACEUTICAL EDUCATION AND PRACTICE.

Our sixth objective has to do with upholding standards of education and standards of pharmaceutical practice. We have made rapid though belated strides in the improvement of the education of pharmacists. The delay has unquestionably been due to lack of interest and initiative of pharmacists themselves in improving their system of formal education. The American Medical Association realized much earlier than did we, the necessity for a high standard of culture and professional attainment in order to maintain the dignity and leading position which medical men occupy. The AMERICAN PHARMACEUTICAL ASSOCIATION, as an association, has not taken the direct interest in promoting higher educational standards for pharmacists which it rightfully should have taken in its position as spokesman for American Pharmacy. It is somewhat late to offer a program now. However, it is not too

late to express complete approval of the present trend in pharmaceutical education toward a cultural background for the necessary technical training required of prospective pharmacists and to urge adherence to the four-year course as a minimum requirement for undergraduate study. It is also important to emphasize that leadership in pharmaceutical education should be retained by pharmacists. The American Association of Colleges of Pharmacy was organized to promote the interests of pharmaceutical education but it is composed only of faculties connected with institutions that teach pharmacy. It is an organization which serves the profession in a specialized field. It does not and cannot speak for American pharmacy as a whole. Its function is to provide for the proper administration and teaching of pharmacy courses. In this function it should have the active support of the AMERICAN PHARMACEUTICAL ASSOCIATION and beyond this, it is certainly the duty of the AMERICAN PHARMACEUTICAL ASSOCIATION to see that the colleges of pharmacy of the United States meet an adequate standard, that they are adequately financed, and that they limit their out-put to the number which can be absorbed by the industry and the profession.

In addition to this responsibility, the AMERICAN PHARMACEUTICAL ASSOCIATION should assume some responsibility for the continuance of the education of those who are actively engaged in the practice of pharmacy. This can be done by planning for extension courses in coöperation with schools of pharmacy and schools of medicine. A start in this direction should be made even if the response, at first, is not too gratifying.

The proposal to organize a Council on Pharmaceutical Practice under the ægis of the AMERICAN PHARMACEUTICAL ASSOCIATION has been approved and a committee headed by Professor Cook has been actively engaged in formulating plans for setting up such a Council. Time has been set aside at one of our general sessions for the presentation of the report of this Committee and a discussion of its plans. It should be understood that the AMERICAN PHARMACEUTICAL ASSOCIATION is not arbitrarily setting itself up as an agency to classify pharmacies or drug stores. However, it is taking cognizance of the fact that pharmaceutical practice may be supplied with varying degrees of expertness and efficiency. It is, therefore, supporting a plan designed to set up minimum standards of acceptable practice for pharmaceutical work in manufacturing plants, in hospitals, in prescription pharmacies and in various governmental or private institutions. In order that the public may benefit to the fullest extent from such plans it seems desirable to indicate in some manner who is qualified to render the specialized services for which minimum standards are to be set. It is recognized that a certificate to practice a profession issued by a commonwealth does not necessarily indicate great proficiency on the part of the holder of the certificate. It is at best merely a protection against gross incompetence by guaranteeing that the licensee has met certain minimum standards and passed a prescribed test of fitness which does not always measure fitness satisfactorily. Hence it seems desirable to follow the trend in medicine, which is now so pronounced, of creating boards of experts in given fields, which examine the qualifications of those who desire to practice as specialists and certify that they are really qualified by training and experience to act as such.

Our seventh objective refers to the code of ethics and need not be commented on here for it is well known to pharmacists everywhere. It may not be out of

place to suggest that Boards of Pharmacy require newly registered pharmacists to sign this code of ethics as a part of the registration requirement as is done in New Jersey.

MEMBERSHIP PROBLEMS AND PLANS.

You heard in the report of Secretary Kelly to the House of Delegates yesterday, that our active personal membership numbers only about three thousand. In spite of a lack of personal participation in its activities, the pharmacists of the United States have looked up to the AMERICAN PHARMACEUTICAL ASSOCIATION as the personification of everything they would like pharmacy to represent in its highest and most professional sense. Practically all of them are ready to point with pride to what the AMERICAN PHARMACEUTICAL ASSOCIATION represents. This was true before there was a building in Washington, before there was a full-time Secretary and even before the organization embarked on the venture of publishing a monthly journal. It was one of those things that is just taken for granted. In other words, the AMERICAN PHARMACEUTICAL ASSOCIATION has for more than four score years been a symbol in the minds of the average pharmacists who never expected to get very close to the ASSOCIATION and who were never directly approached by the ASSOCIATION, but who neverthless sensed the lofty purposes which prompted its organization and have benefited by the activities of individuals affiliated with the ASSOCIATION and acting for the ASSOCIATION on occasions when professional pharmacy was called upon to take part in national affairs having to do with the compounding and dispensing of medicines or the rendering of services commonly described as pharmaceutical. But I raise the question, "Shall the AMERICAN PHARMACEUTICAL ASSOCIATION remain a symbol or shall it become a living thing to all pharmacists?" I am convinced after an experience of nearly twenty-five years, that American Pharmacy needs concerted national direction more than it needs anything else to-day. It is my further conviction that it is absolutely unnecessary to go outside of existing set-ups to provide this concerted action and national leadership. In fact it has been definitely shown that such organizations as the National Drug Trade Conference and the Drug Institute which were organized to provide for the expression of a composite view on behalf of all elements in the drug industry, have failed to accomplish that purpose. I believe that the only way in which the divergent interests of the various elements of the drug industry can be harmonized to the extent required on questions of professional and trade interest, is by the meeting of representatives of those elements on the same level and that means meeting as pharmacists with the welfare of pharmacy in mind. When we meet as pharmacists, we have something in common. When we send our attorneys to meet each other, it is notice to the world that we are endeavoring to obtain the best deal possible for our private interests. Let us solve the problems of American Pharmacy by meeting as pharmacists in the AMERICAN PHARMACEUTICAL ASSOCIATION. There are some who would profit by retaining the American Pharmaceutical Association as a symbol and building it up as a professional veneer for the drug industry. We must guard against any such eventuality.

In an address last January,[1] I covered the membership problem in detail and I desire to quote the following from this address:

[1] *Druggists Circular*, January 1935, page 28.

"The AMERICAN PHARMACEUTICAL ASSOCIATION *is* the all-inclusive organization of pharmacists. It can include in its membership every member of the manufacturing, wholesale, retail, teaching and law enforcement associations. Using the state associations as a basis, it can include every retail pharmacist affiliated with such associations. It is fortunate that such an all-inclusive membership is possible to-day without upsetting or injuring any other national association. By the simple expedient of bringing every state association member into the fold of the AMERICAN PHARMACEUTICAL ASSOCIATION and the National Association of Retail Druggists through the payment of one fee for membership in the state associations, and by the medium of a small per capita tax collected from other national associations, a majority of the retail, wholesale and manufacturing groups can be brought into the AMERICAN PHARMACEUTICAL ASSOCIATION and make it the spokesman for American Pharmacy on matters of general professional and economic concern. The membership fee under such an arrangement will be nominal. The publications of the ASSOCIATION, with so wide a distribution of readers, will bring in revenue, and there will be an end to the demand for new associations and the solicitation of funds with which to do what we should now be doing. Furthermore—and this is of the greatest importance—when the ASSOCIATION becomes representative of the majority of practicing pharmacists, its power of moral suasion will be great enough to make many demands for laws to control trade practices unnecessary. We can only have industrial and professional self-government when we represent the profession and the industry by the consent of the majority.

"If we are ever to adjust the output of pharmacists to normal demands; if we are ever to obtain satisfactory legislation for the control of the quality and sale of drugs and medicines, and if we are ever to establish uniform requirements for licensure and improve the professional and economic status of the pharmacist, we must operate as a unit. With a majority of pharmacists in the various branches of the profession united through membership in the AMERICAN PHARMACEUTICAL ASSOCIATION, our Code of Ethics will take on a new significance. Membership in the AMERICAN PHARMACEUTICAL ASSOCIATION will be a badge of distinction to be taken from anyone who fails to live up to the Code of Ethics and the principles of Fair Play.

"To take care of the present membership, which is, to a degree selective, there may be organized within the ASSOCIATION a body to be known as the 'American Institute of Pharmacy,' the members of which would be designated as 'Fellows.' In this way a new significance would be given to the title 'American Institute of Pharmacy,' which is now nothing more than the name on a building belonging to the AMERICAN PHARMACEUTICAL ASSOCIATION. To become a Fellow of the American Institute of Pharmacy one would first have to be a member of the AMERICAN PHARMACEUTICAL ASSOCIATION for a period of years to be determined, and he would have to present qualifications entitling him to fellowship. We have the same arrangement in the American Association for the Advancement of Science and the American Public Health Association. It is to be expected that fellowship dues will be higher than membership dues in the AMERICAN PHARMACEUTICAL ASSOCIATION. The Fellows of the American Institute of Pharmacy by virtue of their membership will be recognized as outstanding individuals in their field. They may have specialized in prescription practice, in teaching, in law enforcement work, in manufac-

turing pharmacy or in research. This will assure the presence within the AMERICAN PHARMACEUTICAL ASSOCIATION of a group of highly qualified pharmacists to whom should be assigned committee appointments and the elective offices of the ASSOCIATION. Since any pharmacist who is able to qualify as an expert in some phase of pharmaceutical practice would be eligible to fellowship in the Institute, no unjust discrimination can be charged, and representation of the ASSOCIATION by highly qualified individuals will be assured."

It is advisable to await action of the Joint Committee on coöperation of the AMERICAN PHARMACEUTICAL ASSOCIATION and National Association of Retail Druggists with State Associations and the launching of our new JOURNAL before taking any definite action on this plan. My recommendations on the subject are made with this development in mind.

REORGANIZATION OF THE COUNCIL.

The Council of the ASSOCIATION is the executive body and, under present conditions is more responsible for the activities of the ASSOCIATION than any individual officer. It is now composed of seventeen members, nine of which are elected by members of the ASSOCIATION. The balance are officers of the ASSOCIATION. This is an unwieldy body for the transaction of business either personally or by mail. Some years ago we substituted for the Council, a board of directors composed of nine members. This was a much more satisfactory group and the only reason for changing back to the larger number was to satisfy an apparent requirement of the Charter of the ASSOCIATION. I have studied the Charter and I see nothing in its wording which would require the Council to consist of seventeen members. I recommend that the By-Laws be amended to reduce membership of the Council to six elected members and three ex-officio members, namely, the president, the president-elect and the chairman of the House of Delegates. The six elected members should be distributed geographically in accordance with the concentration of membership. The Council should have its own secretary and should be required to meet at least three times a year; one meeting to be held in connection with the annual Convention, one meeting in the fall of the year, and one meeting in the spring. It should be required that the permanent officers of the ASSOCIATION make quarterly reports to the Council and it would be expected, of course, that the Secretary of the ASSOCIATION and such other officers as the Council deems necessary, be asked to attend the meetings which should all be held at the headquarters building in Washington.

The recommendation that the Council should be small is in line with good administration as followed by other efficient national organizations. The provision that the Council should have its own secretary is likewise in line with good administration and goes back to the policy formerly followed by this ASSOCIATION. It seems that when we decided to elect a full-time secretary, we were afraid that he would not have enough to occupy his time, so we made him Secretary of the ASSOCIATION with the work incident thereto at the general sessions of the Convention; we then made him Secretary of the House of Delegates with the tremendous amount of detail that entails at the annual convention and then we topped it off by making him Secretary of the Council so as to be sure that he would have no spare moments, either night or day, during the Convention week. I believe that when we expect our permanent secretary to act at the general sessions, and as Secretary to the House of Delegates,

we have given him more than enough of a load to carry at these Conventions. The duties of the Secretary of the Council would not be sufficiently arduous at any time to call for anything more than nominal expense for clerical help and other services.

ACTIVITIES OF STANDING AND SPECIAL COMMITTEES.

The standing and special committees of the ASSOCIATION have been active in their various spheres and will have some very interesting reports to make. I wish that I could take the time to give a more detailed résumé of the work of all Committees for it represents a true picture of the many and varied activities in which our ASSOCIATION is engaged. However, a mere reference to the more important activities must suffice at this time. New members and those who have not followed the work of the AMERICAN PHARMACEUTICAL ASSOCIATION very carefully in recent years will be amazed at the scope and variety of activities covered if they will look over the titles of the many committees we have at work and read the valuable information contained in their annual reports. The following brief comment on Committee activities may be of interest at this time: The Committee on Local Branches, under Dean Ziefle, has made a very careful survey of the Local Branch situation and will have some recommendations to make. I asked the Local Branches to communicate with me at the end of their fiscal year, setting forth a review of their activities and supplying information about their programs which might be helpful to the future plans of other branches. The response to this request was very gratifying and this information has been turned over to the committee. There seems to be a very live interest in some of our schools of pharmacy in the Student Branches. I hope that this interest can be fostered. I believe that some arrangement should be made to rebate a small portion of the annual dues of members of the AMERICAN PHARMACEUTICAL ASSOCIATION who are members of Local Branches, to the Local Branches. This would aid the collection of dues for both the parent organization and the branches.

The Committee on Pharmaceutical Research headed by Dr. Arny has continued its activities in promoting and supplying financial assistance for outstanding research projects.

The Committee on Proprietary Medicines has not been very active in recent years. It could render a very useful service to the profession by organizing a service for pharmacists which would make available information with regard to the composition, standards, classification and ethical status of proprietary medicines. Certainly retail pharmacists should have as much information about proprietary preparations as is now furnished by organizations serving various groups of consumers. While it is not the function of pharmacists to diagnose or treat disease, they are expected to have full information about the drugs and medicines which they are called upon to dispense. With an authentic source of information on this subject available, the professional status of the pharmacist will be enhanced and service to the public will be greatly augmented.

A similar service can be rendered the pharmacist in connection with cosmetics. Here is a virgin field. There is no Council on Cosmetic Preparations serving in the capacity of the Council on Pharmacy and Chemistry or the Council on Dental Therapeutics. Our Committee on Cosmetics has this matter in mind and could render a splendid service to the pharmacists of the United States as well as the

public by arranging for the collection and distribution of information on the composition and claims made for cosmetic products.

The Committee on the Study of Pharmacy has made a number of contacts with foundations interested in education and in the problems of medical care. It is often stated that a complete survey of pharmacy and the activities of pharmacists is necessary in order to supply the background for departures from existing methods of supplying drugs and medicines. The fact is that a number of excellent surveys have been made and are available in published form. The Charters' Report, the Reports of the Committee on the Costs of Medical Care, the St. Louis Survey and other surveys of the Department of Commerce are all replete with facts and figures concerning the practice of pharmacy and in some instances these reports contain recommendations for the improvement and enlargement of pharmaceutical activities which, if carried out, would be of considerable assistance in placing the practice of pharmacy upon a more satisfactory basis. We should make greater use of information contained in these surveys. At the same time, a complete study of the present situation will undoubtedly prove most helpful at this time and the Committee on the Study of Pharmacy should continue its efforts in this direction.

The Committee on U. S. Pharmacopœia, under the chairmanship of Professor Glover, has been somewhat regenerated during the past year. It is a standing committee of the ASSOCIATION and its functions are to collect statistics regarding the frequency with which official and non-official remedies are used in legitimate practice and to ascertain the general wishes and requirements of the profession throughout the country in regard to any desired changes or improvements in the Pharmacopœia. It has other duties but the foregoing are of paramount importance, particularly in view of the coming revision of the U. S. Pharmacopœia. It seems advisable that membership on this Committee should be restricted to those who are not also members of the U. S. P. Revision Committee.

The Committee on Prescription Tolerances, headed by Dr. Schaefer, has done very valuable work in determining the limits of possible accuracy in the extemporaneous compounding of prescriptions. It is very essential that this work be continued and extended.

The Committee on Weights and Measures, under the chairmanship of President-Elect Costello, has continued to assemble information on the accuracy of weighing and measuring devices in retail drug stores, and in this connection it is pertinent to point out that in states where strict supervision over weights and measures is maintained, the apparatus and equipment are found to be in good condition.

The Committee on Physiological Testing, under the chairmanship of Dr. Munch, has continued its work on the deterioration of digitalis, and in the course of time the experiments reported by this Committee over a period of years should prove of considerable value in estimating the rate of deterioration of biologically assayed drugs.

The Committee on Pharmacy Corps in the U. S. Army, under the chairmanship of Dean Kendig, has energetically pursued the objective of the ASSOCIATION to secure commissioned rank for pharmacists in the Army. The report of this Committee will show that considerable progress has been made. Several conferences were held with Surgeon General Patterson and members of his staff during the past year,

and on one occasion the pharmacies at two Army posts were visited. It appears quite certain that in the near future suitable commissioned rank will be provided for pharmacists whose education has been of the same character as that of other professional groups now enjoying commissioned rank in the Army.

The Committee on Horticultural Nomenclature under the chairmanship of Professor Youngken has been active in making classifications which will assist in the identification of various drug plants.

The Committees on Legislation, Pharmacy Week, Press Relations, Transportation and Code Matters have all functioned in their respective fields and some of their work has already been referred to in other parts of this address.

The Committees on Pharmaceutical Syllabus, International Pharmaceutical Nomenclature and Prerequisite Legislation have likewise functioned in their respective fields, although in the majority of instances their principal activities have been completed for the time being.

The Maintenance Committee for the Headquarters Building has obtained a number of new subscriptions to the Building Fund, and subscriptions totaling $132,036.00 to the Maintenance Fund. Of the latter amount $50,000.00 represents a bequest to be paid at a later date, and of the remaining $82,036.00, the sum of $64,436.00 has been paid. This has enabled the ASSOCIATION to complete payment of all indebtedness on the building and property with the exception of a mortgage of $36,400.00 on the lot in the rear of the building, which is amply covered by the bequest of $50,000.00 previously mentioned. The building has recently been exempted from taxes because of the educational and non-profit nature of the activities carried on by the ASSOCIATION.

A variety of gifts have been made to the headquarters building in addition to the contributions toward the Maintenance Fund, and these are covered in detail in the report of Chairman Dunning of the Maintenance Committee. Our continued thanks are due Chairman Dunning for his untiring efforts in this connection.

The Committee on William Procter Jr. Memorial Fund under Chairman Hancock has made excellent progress toward the preparation and erection of the monument in the headquarters building, and we may look forward to the dedication of the monument in the near future.

Dr. John C. Krantz and Professor Gustave Bachman are to be congratulated on the fine program which they arranged in behalf of Pharmacy at the recent meeting of the American Association for the Advancement of Science. The establishment of a section devoted to pharmacy within this national association is an indication of the progress scientific pharmacy is making.

During the past year we have also had at work Committees on State and National Code Matters; on the Study of Pharmacy Laws and on the Drafting of an Act to Restrict Distribution of Drugs and Medicines to Pharmacists. The latter two Committees should be continued and encouraged in their efforts toward finding a solution for some of the most perplexing problems relating to pharmacy law enforcement. They are headed by Dr. Robert L. Swain and Mr. W. Bruce Philip, respectively. In making a study of Pharmacy laws it has seemed to me to be advisable to enlist the coöperation of the American Bar Association and its Commission on uniform State laws. I am pleased to be able to report that correspondence with

the officers of the Bar Association indicates an interest in our problem of seeking greater uniformity in State pharmacy laws. It is suggested that the Committee correspond further with the American Bar Association.

The Committee on National Formulary and the Committee on Recipe Book have both been busily engaged in the revisions of these respective volumes. Dr. Lascoff as chairman of the Committee on Recipe Book, with the assistance of Mrs. Elsie Kassner, who was selected as editor, and the other members of the Committee, has practically completed the revision of the Recipe Book, and I feel sure that the second edition of this important and valuable volume will meet with general approval. The new edition of the National Formulary is nearing completion and will be an outstanding work in its particular field.

I cannot allow the opportunity to pass without paying a tribute to the diligence and effective work of the committee which is revising the National Formulary. Professor Gathercoal has brought to the chairmanship of the committee a type of leadership in which American Pharmacy and the AMERICAN PHARMACEUTICAL ASSOCIATION can take just pride. His sane approach to the problems of the revision, the scientific thoroughness which has characterized the preparation of the monographs and withal the great patience and willingness to seek and accept advice which have been displayed throughout the revision, call for our most profound admiration and thanks.

To Editor Eberle, I wish to express my thanks for coöperation extended throughout the year.

To Dr. Kelly whose very difficult and trying position as Secretary of an ASSOCIATION, which is endeavoring to be helpful to the divergent interests within the drug industry, requires great patience, tact and capacity, and who possesses all these attributes to an unusual degree, I likewise desire to express my gratitude. We have not always agreed on methods but I doubt whether there has ever been a disagreement between us as to the position which the AMERICAN PHARMACEUTICAL ASSOCIATION should take on matters of fundamental importance. As officers of the ASSOCIATION, we have had to place our own interpretation on matters regarding which the ASSOCIATION and Council failed to give definite instructions. There has been no difficulty in harmonizing our views or stating our respective positions on such matters because they were approached with the interests of American Pharmacy and the AMERICAN PHARMACEUTICAL ASSOCIATION at heart. Such recommendations as I have made with respect to the secretaryship are intended to clarify and assert an association policy on the subject and to give to the office that responsibility which the proper exercise of its duties demand.

To all others whose advice, counsel and coöperation I have had throughout the year, I express my sincere appreciation and thanks, and finally, I thank the members of the ASSOCIATION for the opportunity that has been given me to serve in this high office.

RECOMMENDATIONS.

Recommendation No. 1.—It is recommended that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to require its full-time officers to confine their pharmaceutical activities to the affairs of the ASSOCIATION. This is not to be interpreted as an abridgment of the privilege to take part in related affairs in the capacity of advisor, committeeman or delegate.

It is, however, to be interpreted as abridging the privilege of serving in a secretarial or managerial capacity to any other organization or group or to act as the spokesman or representative of any other organization or group within the sphere of pharmaceutical activity unless permission to do so is specifically granted by the Council.

Recommendation No. 2.—It is recommended that the secretary of the ASSOCIATION be also designated as general manager and that this title shall carry with it executive supervision of and responsibility for the activities of the ASSOCIATION in the headquarters building.

Recommendation No. 3.—It is recommended that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to work actively toward a unification of pharmacal forces within the United States and that the immediate steps to be taken in this direction shall be the fostering of an intimate contact with the State Pharmaceutical Associations and with the National Association of Retail Druggists to the end that membership in state Pharmaceutical Associations shall eventually carry with it a personal affiliation of every State Association member with the A. PH. A. and the N. A. R. D.

Recommendation No. 4.—It is recommended that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to assume active responsibility for the general direction of pharmaceutical affairs in the United States. This is not to be interpreted as an effort to duplicate the activities of any organization now functioning in a specific field such as education, licensure, manufacturing, wholesaling or retailing. It is, however, to be interpreted as an offer of coöperation from the representatives of the profession at large with respect to the formulation of policies affecting pharmacy as a whole and as an expression of the intent to assume leadership in those matters which are national in their scope and which affect the relations of pharmacists to other professions, the relations of pharmacists to each other and the relations of pharmacists to the public.

Retommendation No. 5.—It is recommended that the president-elect be made an ex-officio member of the Council immediately following his election and that the procedure at the annual convention be so arranged as to give the president-elect an opportunity to submit recommendations in time for approval at the meeting at which he takes office.

Recommendation No. 6.—It is recommended that the office of Librarian and Curator of the Museum be created as soon as possible as a full-time office.

Recommendation No. 7.—It is recommended that the contents of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION be confined to scientific and professional papers of permanent value or significance, to the monthly abstracts of pharmaceutical literature and to editorials dealing with scientific and professional matters. It is further recommended that as soon as this change can be brought about, the material of general interest now appearing in the JOURNAL together with helpful papers and articles on professional and economic subjects be issued in the form of a new monthly publication directed particularly to the retail pharmacists of the United States. It is further recommended that this publication carry no advertising.

Recommendation No. 8.—It is recommended that the new Journal referred to in the preceding recommendation be mailed to the members of all State Pharmaceutical Associations upon payment of a small per capita tax by the respective State Associations and that it be issued with the coöperation of the N. A. R. D. if the plans for unification and coördination of the activities of State Associations and the two National Associations now under discussion are consummated.

Recommendation No. 9.—It is recommended that the coöperation of the AMERICAN PHARMACEUTICAL ASSOCIATION be extended to Boards of Pharmacy in their efforts to establish adequate standards for the practical training of pharmacists, especially in cases where departures from established customs are contemplated and that the results of any survey or study which the ASSOCIATION may make in connection with the formulation of standards for practical experience, be made available to the Boards.

Recommendation No. 10.—It is recommended that the dangers of the distribution of drugs and medicines without the supervision of pharmacists be called to the attention of the American Medical Association and Medical Societies of various states with the request that they join the AMERICAN PHARMACEUTICAL ASSOCIATION in an aggressive effort to persuade drug manufacturers to limit distribution of their drug products to registered pharmacists.

Recommendation No. 11.—It is recommended that the Council on Pharmaceutical Practice give consideration to certification of specialists in the fields of hospital pharmacy, manufacturing

pharmacy and prescription pharmacy, by the establishment of boards of experts for such certification.

Recommendation No. 12.—It is recommended that the committee on study of pharmacy be instructed to explore the possibilities of extension courses for practicing pharmacists to the end that formal lectures and demonstrations in connection with newer materia medica may be arranged at suitable points and that such instruction be confined to fundamental scientific progress in the field rather than to commercial preparations.

Recommendation No. 13.—It is recommended that the By-Laws be amended to reduce membership of the council to six elected members and three ex-officio members namely: the president, the president-elect and the chairman of the House of Delegates. The six elected members should be distributed geographically in accordance with the concentration of membership.

Recommendation No. 14.—It is recommended that the Council be authorized to take such steps as may be necessary to obtain the best legal opinion on the status of the National Formulary as a legal standard under the Food and Drug Act and that such changes as may be required in the manner of selecting the Revision Committee in order to obtain Congressional authorization for the revision and publication of the National Formulary, be inaugurated as soon as possible. It is further recommended that the U. S. P. Revision Convention be urged to take similar steps with respect to the U. S. P.

Recommendation No. 15.—It is recommended that the Committee on Proprietary Medicines be requested to study the possibilities of organizing an informational service to the profession with regard to the composition, standards, classification and ethical status of proprietary medicines and report its recommendations to the Council for action at an early date.

Recommendation No. 16.—It is recommended that the Committee on Cosmetics be requested to give immediate attention to the possibility of organizing a Council on Cosmetic Preparations with functions similar to the Council on Pharmacy and Chemistry of the A. M. A. and the Council on Dental Therapeutics of the A. D. A. so that necessary information on the composition and claims made for cosmetics may become available to pharmacists and proper standards be devised for the protection of the public in the commerce in these commodities.

Recommendation No. 17.—It is recommended that the Council give immediate attention to the possibility of making available from the permanent funds, accumulated interest, or other sources, a sufficient sum of money to launch some of the activities to which this ASSOCIATION is committed. In launching these activities, preference should be given to the ones which appear to promise the most immediate return of the financial outlay required in their inauguration. Activities which seem to require immediate attention are: revision of the publication program; membership campaigns; Council on Pharmaceutical Practice.

INTERNATIONAL PHARMACEUTICAL FEDERATION.

The ninth general assembly of the International Pharmaceutical Federation was held on Monday, July 29th, in the rooms of the Nationale Pharmaceutique, Brussels. This is the second meeting of the Federation to be held in Brussels since the foundation in 1912. The President of the Federation (Dr. J. J. Hofman, The Hague) presided over an attendance of about fifty members, including Professor Dr. L. van Itallie (*president d'honneur*), M. G. Barthet, M. O. von Koritsanszky, E. Saville Peck and Dr. E. Host Madsen (*vice-president*), Professor Dr. H. Baggesgaard Rasmussen, and Dean Burbidge of Nova Scotia.

THE PAN-AMERICAN MEDICAL ASSOCIATION.

On August 2nd, the Pan-American Medical Association completed its sixth cruise to South America. The itinerary included brief visits to Nassau, Jamaica and Curacao, more extended visits to Rio de Janeiro and São Paulo, and again brief visits to Trinidad, Puerto Rico and Bermuda. The visit of more than a hundred American physicians to our South American neighbors must result in benefit to international relations and acquaint the South American countries more fully with the medicine of the United States. Moreover, opportunity was given to the American visitors to obtain an insight into the medical institutions and to some extent into the nature of practice of the countries visited.—*Jour. A. M. A.*

ADDRESS OF THE CHAIRMAN OF THE HOUSE OF DELEGATES.

BY ROWLAND JONES.

Ladies and Gentlemen of the House of Delegates:

We are met here in the great Northwest, for the eighty-third annual convention of our ASSOCIATION. The eighty-third year in the life of the AMERICAN PHARMACEUTICAL ASSOCIATION just closed has been eventful. It seems that as the age of our organization increases, our problems increase in more than direct ratio. Organization for mutual effort is fast becoming one of the salient characteristics of the age in which we are living. We should be grateful that this ASSOCIATION continues to meet these problems, as in the past, in an honest and sincere manner and without any of the compromises which are the burdens of other professional organizations. I know of no organization of like kind in the country which is blessed with such a group of unselfish workers, often laboring in comparative obscurity, who only ask the opportunity to serve. It is this spirit, which I believe is unique, that has made this ASSOCIATION great and obtained for our profession the long list of major accomplishments of which we are all so proud.

ROWLAND JONES.

The House of Delegates is representative of every interest in pharmacy. Its machinery is simple and direct in action. Every part of the nation has a place among its delegates. It offers to the state associations a national forum to which they may bring their problems and their successes. But I feel that the House of Delegates has not been used to the full extent of its possibilities and I invite the attention of the members to this fact. Ways and means should be formulated through which we may utilize the full potentialities of this body.

It has been my privilege during the past year to live in close proximity to the AMERICAN INSTITUTE OF PHARMACY, that marvelous monument to our profession which this ASSOCIATION now calls home. It is with pleasure that I take this opportunity to tell the members of this House how fortunate you are to have the services of E. F. Kelly and E. G. Eberle. I have had the privilege and pleasure of working closely with them during the past year. Their unceasing labor and outstanding devotion to this ASSOCIATION is inspiring to see. With such men as this in charge of the business of our ASSOCIATION, the future can never be in doubt.

In tracing the history of the past year, it is probable that it would be difficult for us to agree upon what the outstanding development in pharmacy has been. To my mind it has been the stipulation by Federal and State Relief agencies that prescriptions, paid for with public funds, shall call for U. S. P. and N. F. preparations whenever possible. As far as I know, this regulation has been in effect in every state and it is my experience that it has been generally complied with. I believe that this policy has brought our official compendiums to the attention of the

medical profession as never before and in a manner impossible by the usual methods of publicity and education. In my opinion, the salutary effect upon pharmacy has been enormous and we will feel it for a long time to come. I do not know who is responsible for the policy, but whoever he or they may be, we owe them our deepest gratitude.

During the past year, we have seen additional states join the ranks of the great number having adequate prerequisite laws. We are just beginning to feel the effects of this great change which we have accomplished in such a remarkably short time and I predict that during the next few years we will realize the results of which we have dreamed.

I invite you all to visit at the earliest opportunity one of our colleges of pharmacy, if you have not done so recently. Examine the plant, acquaint yourself with the members of the faculty, but above all observe the quality of the student body. The men and women now graduating from our colleges will give you a real thrill. These young men and women are the hope of our profession. As their number in active practice increases, many of our ills will disappear. The average income of the practicing pharmacist will increase to somewhere near the level commensurate with his educational investment.

But these happy developments may bring another serious problem. I fear, unless economic conditions affecting retail pharmacy are not soon improved, that we will face a growing demand for a relaxation of present prerequisite requirements. Should this happen, we will find ourselves in a vulnerable legislative position. The annual graduation roll from our colleges has been drastically reduced. A scarcity of pharmacists with the increased remuneration which they will be sure to demand will strengthen the demand for a retrogression in standard of education in pharmacy unless competitive conditions improve or if they become worse as is a distinct possibility at this time. While the AMERICAN PHARMACEUTICAL ASSOCIATION has never been particularly active along commercial lines, and I think justly so, in the past at least, we may be forced to enter that field, in active competition with the other national body, in order to protect what I believe to be this ASSOCIATION'S greatest accomplishment, the 4-year law. Present profit and loss statements of the average retail drug store indicates that an increased salary budget cannot be maintained with financial safety. A return to educational standards of twenty years ago would be a bitter pill to swallow. We simply cannot allow it to happen. No sacrifice would be too great if necessary to prevent it. I urge your earnest consideration of this very possible future trend of events.

Just a word about NRA and the codes. I deeply regret that the court decision invalidating that whole effort came just at the time when the loss limitation provision had begun to demonstrate its possibilities. However, I believe that the whole code effort has been worth all it has cost, that even to-day we are feeling benefits from the lessons learned in that experience. Secretary Kelly's work on the National Code Authority was outstanding and invaluable and commercial pharmacy is indebted to the AMERICAN PHARMACEUTICAL ASSOCIATION for his services.

A great deal has been written of late about the multiplicity of pharmaceutical organization in this country, and the desirability of some method of consolidation of membership. Plans have been suggested but no one of them has been generally well received. While I feel that a physical consolidation of the AMERICAN PHAR-

MACEUTICAL ASSOCIATION and the National Association of Retail Druggists is neither desirable or possible, I am of the opinion that some mutually advantageous method of joint dues and membership can be found and recommend that further joint study of the matter be made.

All of us in attendance at this convention are familiar with the long list of accomplishments of this ASSOCIATION which have improved the status of the profession of pharmacy and have thus vitally affected every pharmacist in every state. But I am of the definite opinion that far too many of the pharmacists of this country do not realize the extent of the benefits which have come to them as a direct result of the work of this ASSOCIATION. This is, because they have not been told about them. Modesty is to be admired but I feel that this ASSOCIATION has carried modesty a little too far for the good of the organization. I believe that efforts to bring the things that have been done and that are now in the process of fulfilment, to the attention of the average pharmacist might profitably be made without loss of dignity or prestige. I am not so sure but that the AMERICAN PHARMACEUTICAL ASSOCIATION has been hiding its light under a bushel, to some extent at least.

The President and Vice-Presidents of the AMERICAN PHARMACEUTICAL ASSOCIATION, 1935–1936.

The officers of the House of Delegates for 1935–1936 are: *Chairman*, Roy B. Cook, Charleston, W. Va.; *Vice-Chairman*, C. Thurston Gilbert, Noroton, Conn.; *Secretary*, E. F. Kelly, 2215 Constitution Ave., Washington, D. C.

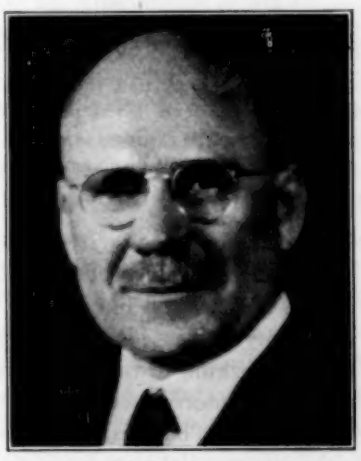
ADDRESS OF THE PRESIDENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY.

BY ERNEST LITTLE.

Mr. Chairman, Fellow-Members, and Guests:

I know that I reflect the sentiment of my Eastern and Mid-Western associates when I say that we consider it a privilege to hold our thirty-sixth annual meeting of the American Association of Colleges of Pharmacy in this beautiful city of Portland. Your unusual hospitality has already made itself felt. We feel at home and at ease among cordial, sincere friends. We shall do our utmost to make this meeting one of the most pleasant, successful meetings in the history of our Association. How better could we show our respect, and express our appreciation to the citizens of this great state?

I realize that I am displaying no originality when I begin my presidential address with the statement that I have received incalculable benefit from the fact that it has been my privilege, during the past year, to read and critically study the proceedings of our meetings and the recommendations of our presidents of the past thirty-five years. I predict that this fact will continue to be commented upon by our presidents in the future. To review the progress of our Association from the time of its inception, thirty-five years ago, down to the present day, is an interesting and challenging experience. It was born with the dawn of the twentieth century in the city of Richmond, Virginia, where so many worthy projects have been initiated, and from whence capable leaders have stepped forth to carry promising infant projects to fruitful maturity.



ERNEST LITTLE.

To-day, three and a half decades later, we are assembled on the opposite side of our continent, where our Association stands forth as a great tribute to such past-presidents as Prescott, Remington, Kaufman, Whelpley, Hynson, Searby and Schlotterbeck, all of whom have passed to the great beyond. It must bring great satisfaction and some measure of pride to the hearts of such men as Edward Kremers, our oldest living Past-President, Wulling, Lyman, Jordan, Rudd and others of their type, who are still faithfully working with the vigor and enthusiasm of younger men.

I wish I might stimulate those of you who have not already done so, to review at least the presidential addresses of the past thirty-five years. You will find it an interesting and decidedly worth-while experience. I believe that the fund of information thus obtained, serving as a background for future deliberations, would greatly increase your efficiency and effectiveness as individual workers and would make for progress within the Association.

In my judgment, the present marks a rather vital period in the life of the A. A. C. P.—vital in the sense that we, in the next few years, must decide whether

the wonderful potentialities brought into being by our predecessors will be fulfilled, or perhaps dissipated by an extravagant and somewhat less idealistic generation.

Our Association will either become an increasingly vital, constructive force in pharmaceutical education or it will shrivel and atrophy until it is but a meaningless hulk whose possibilities were allowed to remain untapped by visionless or ineffective association members. This, as I see it, is the all important question which we must decide.

I firmly believe that the spirit of such pioneers as Remington and Kremers and Whelpley will prevail, and that we shall not become satisfied with modern mediocrity.

A few weeks ago, I heard one of our most respected and most dynamic past-presidents remark somewhat as follows:

"I wish I knew what is the next step for our Association to take. We must go forward. It would be fatal to stand still, but I have never before felt so puzzled and uncertain."

I am in accord with the spirit of these remarks but shall take the liberty of revising them somewhat as follows:

"The policy which the A. A. C. P. should pursue in the immediate future is not as definitely clear as it has been in the past. We must progress. It would prove most unfortunate if our appreciation of past progress should tempt us to indulge in a period of indolence and self-appreciation. Such an attitude constitutes retrogression, and if followed for even a short time, leads only to disaster."

There is a great similarity in the spirit of these two statements, but also fundamental differences in their implications.

We should all like to feel that we share, at least in a measure, the leadership which my respected friend so well exemplifies. Still, we should not abandon caution in working toward such an objective. The more dynamic one's leadership becomes, the more essential it is that caution should be one of its distinguishing characteristics. There is, perhaps, nothing more deadly than indolence, and no one more impotent than the reactionary. At the same time, we realize, that there are few things more perilous than unbridled ambition and possibly no individual more dangerous than the iconoclast. I once heard an iconoclast defined as a person who would blow up all existing organizations and institutions in the hopes that when the pieces fall, they may be better assembled. The chances are decidedly against improvement when the changes are so profound, and the forces responsible for them so violent. I am always a bit suspicious of the iconoclastic reformer, unless he can point to a record of real accomplishment as a result of his past activities. He is frequently impelled by an uncontrollable desire for change and for different, if not better, leaders.

Normal, natural changes take place slowly but continuously. We should not feel that it is absolutely essential for us to make an important pronouncement in order to progress during the ensuing year. It may be that the time can be spent to best advantage in substantiating our more recent advances.

Those of you who have seen the Washington monument, in our Nation's capitol, will recall that about half way up the monument there is a line of separation which seems to mark, or at least suggest, a temporary cessation of building activi-

ties at that point. Upon asking the cause of this apparent line of cleavage, I was told that when the building had progressed that far, definite evidences developed that the foundation was inadequate for further altitude; in other words, they were unable to go higher until they went deeper.

It seems very likely that retail pharmacy and possibly pharmaceutical education as well, may have reached a point where they ought not to go higher until they go deeper. I realize that it is more interesting and satisfying to build upward in the sunshine of the day, than it is to labor, somewhat unknown, upon a subterranean foundation, important and fundamental as such work may be. I know also that as true artisans we shall not hesitate to assume that responsibility which seems most necessary, and which we can best render. If, for the time being, it seems inadvisable to build higher, we shall all devote ourselves to the less dramatic, but equally important foundational work, in order that, over the years, the progress of pharmaceutical education may continue uninterruptedly.

Pharmacy is built upon a rather broad foundation which in turn supports such correlated institutions as pharmaceutical education, retail pharmacy, manufacturing pharmacy, wholesaling and other pharmaceutical activities. We are more interested in certain restricted parts of this foundation, but all of it engages even our selfish attention. Colleges of pharmacy cannot enjoy real and permanent prosperity, except in so far as the profession of pharmacy is also prosperous. For this and other reasons as well, the interests of retail pharmacy and pharmaceutical education are closely coördinated and somewhat overlapping. Perhaps we could advantageously spend a few minutes examining such parts of this general foundation as particularly concern retail pharmacy and pharmaceutical education.

Even a cursory examination will reveal the fact that what may be thought of as the very corner-stone of the profession's foundation, namely, professional service, is greatly in need of strengthening. I believe this weakness can be remedied and might very properly be attended to before the superstructure is again enlarged. One of the great shortcomings of the retail pharmacist is lack of imagination, initiative and originality. One of the pitfalls of any retail business is the temptation to sit down in an effectively organized and well-equipped store and wait for things to come to you. You may be ever so patient but the end will not be accomplished. The physician will not increase his prescription writing simply because the pharmacist wishes him to do so. He must be shown that the patient's and physician's welfare, as well as the welfare of the pharmacist, can be best served by so doing.

It would be well if our colleges gave more formally organized instruction in the contacting of physicians by pharmacists. Such activities should be based, not upon high-pressure methods of salesmanship, but upon the ability to make clear to physicians how the welfare of the patient can be promoted by greater coöperation between physician and pharmacist.

Some of you may very properly remark that comparatively recent changes in the curricula of medical colleges have made coöperative endeavor of this sort exceedingly difficult. My answer is that the responsibility of our pharmacy colleges does not stop with their undergraduates. I feel that, for the time being, at least, they must be prepared to render assistance to the registered pharmacists already in the field and to practicing physicians as well.

In New Jersey, a joint committee of physicians and pharmacists, representing

the New Jersey Medical Society and the New Jersey Pharmaceutical Association, are coöperating in drawing up an abbreviated but exceedingly useful New Jersey Formulary. The work of this joint committee was discussed at great length by the New Jersey Medical Society at its last meeting in Atlantic City. Pharmacist members of the Joint Committee were in attendance at this meeting and presented a display of New Jersey Formulary preparations which had been prepared at the College of Pharmacy. A capable prescription pharmacist was in charge of the display at all times to explain the various preparations and the objectives of the Joint New Jersey Formulary Committee to the host of inquiring physicians. These prescriptions are being published in the *New Jersey Journal of Pharmacy* and the *New Jersey Medical Journal*.

The State Medical Society at this same meeting recommended to its county organizations that they invite properly qualified individuals from the profession of Pharmacy to appear before their county groups to assist in increasing the efficiency of the physicians in prescription writing and in promoting the use of such useful publications as the New Jersey Formulary. Needless to say, as much as possible will be done along this line. We find considerable enthusiasm on the part of physicians for this sort of coöperative endeavor. I know for a certainty that these New Jersey Formulary prescriptions are being increasingly used by the physicians of the state and would be still more generally used if we could develop more intelligent interest and continued enthusiasm on the part of retail pharmacists. The initiative and chief motive power must always come from the pharmaceutical group.

The opinion has been expressed that the development of state formularies is a backward, retrogressive step; that such work should be headed up as a national project by the U. S. P. and N. F. Revision Committees. I can see much force and reason in such a suggestion. I believe, however, that much of what success we have experienced in New Jersey has been due to an appreciation on the part of physicians that they themselves were coöperating in the development of a formulary which would later be jointly used by pharmacists and physicians. They did not feel that a group of individuals, about whom they knew very little, was bringing pressure to bear on them to increase the professional work of the pharmacist. They were possessed of an enthusiasm born of coöperation and kindled by a thoroughly justifiable, if somewhat selfish, satisfaction which one experiences as a result of his personal participation in what seems to be a decidedly worthy project. It is possible that a national committee might supervise this important work in the various states in such a way as to retain the advantages which I have above enumerated.

The field of Dental Pharmacy, which has been so splendidly started by Assistant Dean Schicks is still in its infancy. Those who have had any experience in this field will, I believe, agree that the dentist possesses great enthusiasm to proceed with this type of professional work. I venture the opinion that the professional work of the retail pharmacist would be greatly increased, perhaps doubled, by the proper development of the field of Dental Pharmacy. It is reassuring to find an increasing number of workers appearing to follow up this most important pioneering work. The field is a big one and the surface hardly scratched. I trust that more volunteers will be forthcoming.

Professor Schicks has presented a course in prescription writing to the den-

tists of several county associations during the past two winters. The work has been received with enthusiasm and appreciation on their part. Prescriptions from dentists are coming into our stores in increasing numbers. A good start has been made. Again, this work would be greatly facilitated if we could devise some means of developing greater interest and more effective coöperation on the part of retail pharmacists.

Courses in Laboratory Clinical Pathology, including a comprehensive study of blood, urine, sputum, stomach contents, feces, spinal fluid and exudates, together with such special subjects as Wasserman and Kahn tests, kidney and liver function tests, determination of basal metabolism, the Friedman test for pregnancy, etc., would enable the pharmacist to increase his sphere of professional services to the physician in a manner beneficial to both and advantageous to the patient as well. I realize that courses of this nature are being offered in some, but comparatively few, of our colleges at the present time. It has been successfully offered as a graduate course during the past three years in the institution which I represent. Unusually well-trained and proven teachers are necessary for the successful presentation of the course.

These are but some of the ways in which colleges could more fully coöperate in increasing the professional services of the retail pharmacist and thus help to keep the corner-stone of the foundation of our profession firm and secure.

One hundred years ago the pharmacist was, of necessity, a resourceful man, possessing great initiative and ingenuity. He was responsible for the identification, selection and care of his drugs and the actual preparation of many of his inorganic chemicals, now obtainable from manufacturing chemists. In more recent years, many developments have greatly altered these conditions. The introduction of the pill machine, making possible the manufacture of coated pills on a large scale, the advent of machine-made plasters and other mechanical advances, made it less necessary for the pharmacist to use the highly specialized manipulative technique essential to such important preparations. The manufacture of tablet triturates and compressed tablets served to further reduce the professional work of the pharmacist and has, quite naturally, proved a great temptation to physicians to dispense such conveniently prepared medicaments.

Let us not waste time regretting the changes which the past has wrought, unfortunate as some of them may be, but let us look to the future with a feeling of real enthusiasm for the opportunities which are there presented. The rolling of pills, the making of tablets, the preparation of tinctures, are important and dignified operations, but if we find that some of these processes can be accomplished quite as well by machinery, lessening the time of preparation and greatly standardizing the manufacture of medicines of this type, we should not wish it otherwise. We should not regret that modern grinding machines have made it possible to pulverize in a few hours an amount of crude drug which would have required months if reduced by the pharmacist with the mortar and pestle, as previously done. These changes constitute progress and the pharmacist must progress as well. This, as I see it, is primarily the responsibility of our colleges of pharmacy. The pharmacist has had released considerable time previously required by his professional work. Much of this time is now being devoted to merchandising. It is the duty of our colleges to choose men of professional caliber and to offer to them such broad

fundamental training in the different branches of science as will enable them to use their time in a more professional manner. This is all quite possible and should be one of the main objectives of educators in the field of pharmacy.

Perhaps some of you may say that the institution which you represent has long ago altered its program and curriculum in such a way as to provide adequate opportunities of professional service for its graduates and that you have pointed out and stressed ways and means of effectively applying such talents. Without wishing to ignore any such sincere protests, the present status of retail pharmacy establishes the fact that our past efforts along this line have proved largely ineffective. The desired results have not been attained. It is imperative that we acknowledge our failure and rededicate ourselves to this most important obligation and responsibility. The responsibility rests squarely on our shoulders. The problem can be solved, but colleges of pharmacy must assume the leadership and play the leading rôle.

I do not wish to create the impression that the problem can be solved with fairy-like simplicity. I do not believe that it can. The difficulties involved are profound and fundamental, and only profound methods of solution will prove effective.

We must start at the beginning, with our entering students. We should estimate as accurately as possible the numerical needs of the profession. The overcrowding of any profession means eventual cheapening and loss of professional pride. An accurate estimate of pharmacy's numerical needs will, I believe, make it possible for us to rather carefully select our entering class. This selection should, of course, be based upon a consideration of the scholarship and general ability of the applicants, but even more important than that, upon their character, reliability and aptitude for professional work. It is, perhaps, true that the most profound problems in our professional fields to-day are due not so much to mediocrity on the part of their members, as to misguided ingenuity, lack of professional pride and decent responsibility. An industrious, persistent, conscientious and thoroughly reliable fourth-quarter high school graduate might very well be given preference over a brilliant, personally ambitious first-quarter student who measures success in terms of dollars and who achieves his objectives by whatsoever methods may prove most effective. One should not be thought of as failing to appreciate high standards of scholarship because he has learned to appreciate and evaluate such essential traits of character as industry, sobriety, purposefulness, self-control and honesty as essential complements of ability and power to achieve.

The wise selection of students for professional fields, involving important human contacts and relationships, will never become so standardized as to operate by rule-of-thumb methods.

In this connection, I feel the time has come for the Association to formally start work on the project of developing "Pharmacy Aptitude Tests," which tests should prove a great help to our member colleges in the selection of their students on a basis of character, ability and general aptitude for pharmacy. So far as I know, there are, at the present time, no tests available by means of which we can determine at all accurately, whether or not applicants for admission have the fundamental interests and abilities essential for reasonable success as pharmacy students

and as pharmacists, hence the large number of failures which we find both in our colleges and in the profession as well.

I realize that no system can be devised which will work at all perfectly, but I do feel that we should be able to determine to a reasonable degree of accuracy the abilities and aptitudes of prospective freshmen and thus insure a better grade of student and a higher type of practitioner as well. Such tests would, of course, be used as one of several indications of probable success and hence as only one of several bases of admission to the college of pharmacy.

Inasmuch as the development of such tests is likely to require a considerable period of time and should not be hurriedly done, I feel that the work should be begun without delay, making use of such information as may be found in the Charters' report, from the various drug survey reports, the national Pharmaceutical Syllabus, the Association of American Medical Colleges, the American Medical Association and other sources which will be easily discovered as soon as this work is seriously undertaken. Unless some such start is made, we shall find ourselves greatly handicapped in solving many of the problems confronting pharmacy to-day. We should never lose sight of the fact that pharmacy will very largely be what its practitioners desire it to be and that which they wilfully make it.

Having made the wisest possible choice of our students, we shall, of course, furnish these undergraduates with such scientific, professional and other training, as will best equip them to meet their responsibilities of the future. In so doing, we should keep ever before us the fact that we profess to be and are recognized as professional schools.

The above statement is not made in any supercilious, haughty attitude. We recognize, in the first place, that there is no sharp line of cleavage between professional and non-professional activities. We realize that no operation can be spoken of as being professional simply because it is involved and requires a considerable amount of technical or professional training for its successful execution. Coupled with this must be the desire and determination to render the highest quality of service of which one is capable, quite independently of what the financial return may be. When performed in this manner and in this spirit, the most lowly task becomes dignified, rises to great heights, and constitutes what many people like to think of as professional work.

Although the above attitude is indeed a wholesome one, I have never been able to bring myself to feel that any individual who does his best and has learned to do some one thing well, is entitled to be classified as a professional man. It requires much more than good intention to make a professional man. Long years of work and study in order to become familiar with the fundamental branches of science upon which the profession is based, still more intensive study in the specialized field of the profession involved, intellectual honesty, the ability to think clearly and concisely, arriving at conclusions through logical processes of reasoning: these are some of the characteristics which may very properly be expected of the professional man, but they are not enough. Coupled with such knowledge and intellectual accomplishments must be certain traits of character which are of equal or even greater importance. He should be industrious, tolerant, reliable, honest and above all else, imbued with the spirit of helpfulness even to the point of sacrifice. There is no place in any profession for a really selfish individual. The desire for personal

gain cannot be the controlling factor. We are all obligated to provide for the future needs of ourselves and our dependents, but if we are to qualify as truly professional men, we must organize all of our activities around the central idea of service, and by that I mean, being just as useful and decent as possible in every human contact and relationship.

In like manner, colleges of pharmacy, although they will have many and varied responsibilities of importance, should arrange and organize their activities around the central idea of professional training. We should aim to stimulate our students to become useful, rather than wealthy, and efficient, rather than clever. We should strive to turn out men whose chief ambition is not to capitalize and exploit pharmacy, but who will give serious profound thought to the problem of how they can best make their contribution to pharmacy and leave it not impoverished, but a little richer and a little more respected as a result of their contact with it. On such a foundation we can look to the future of our profession with confidence and courage. Without it, we have no guarantee of permanence and certainly very little virtue upon which to base any such expectation.

During the past few years I have heard various legislative measures proposed to strengthen the foundation of retail pharmacy and to increase the security of the retail pharmacist. Most prominent among them have been

(*a*) The Capper-Kelly Bill.
(*b*) Restricting the sale of patent and proprietary medicines to the drug store.
(*c*) Federal and State Drug Codes.
(*d*) Pharmacist Ownership Bill.
(*e*) Fair Trade Bills such as have recently been adopted by various states.
Etc., etc., etc.

All of them are primarily concerned with the non-professional activities of the pharmacist. Some of them, such as the drug codes, have proved very transient, leaving despair and blasted hopes in their wake. Others have been declared unconstitutional by the Supreme Court, still others probably would be so declared were they enacted into law.

I have very little hope of affording the pharmacist permanent relief by way of legislation, except in so far as such legislative measures concern themselves with a service in behalf of public health and public welfare, which the pharmacist is especially prepared to render.

The pharmacist's greatest feeling of security will be realized when he can stand forth as a truly professional man with the realization in his heart that his legislative needs are few, due to the fact, that he is offering an important professional service which few individuals are prepared to offer.

That is the challenge confronting our colleges of pharmacy. It is a problem which we and we alone can solve by the following procedure:

(1) Careful and conservative selection of students; (2) Stressing professional training in our undergraduate work; (3) Adequate training and advice as to how these possibilities of professional service can best be realized following graduation; (4) Enlisting our services in promoting coöperative endeavor between physicians, dentists and pharmacists, thus increasing their mutual effectiveness in behalf of public health and public welfare.

May we rededicate ourselves to this most important responsibility.

Some of the more important remaining building blocks in the foundation of pharmacy, underlying retail pharmacy, are professional pride, desire to serve, desire to please, reliability, sustained industry, a conception of success based upon unselfish service, rather than material possessions, initiative and individuality, interest and activity in community affairs, and above all else, honesty.

It would be inappropriate for me to discuss these important factors in this address. We all realize, however, that it is our responsibility and duty to develop these qualities and character traits in our students. By so doing, we help to keep secure the foundation of retail pharmacy, promote the success of its practitioners and insure the continued operation of our colleges of pharmacy.

There should be little uncertainty as to the responsibility of our colleges of pharmacy in the immediate future, when such profound and fundamental problems, threatening the very existence of pharmacy as a profession, are awaiting our solution.

The question of how much practical drug store experience should be required of graduates of a four-year course in pharmacy in an approved college of pharmacy, and when this experience should be obtained, is again being agitated by a small but exceedingly aggressive group.

Our Association has never put itself on record in regard to this question. Inasmuch as it pertains to the training of a pharmacist, I feel that we should so so.

It is, I believe, very generally accepted that not more than one year of practical experience should be required of four-year college graduates. The question which has recently been reintroduced is whether or not this practical experience must be obtained following graduation. One state has recently passed legislation requiring at least one year of practical experience in an approved pharmacy, following graduation, as a prerequisite to the practical State Board of Pharmacy examination.

Some of the arguments put forth in favor of this requirement are as follows:

I. Such apprenticeship would closely parallel the year of internship which has worked out successfully in the field of medicine.

II. It would be obtained at a time when the apprentice would receive the most benefit from the training and would be of greatest value to his employer.

III. It would greatly simplify the task of regulating practical experience by Boards of Pharmacy.

May we spend a few minutes critically reviewing these arguments?

We are, of course, aware of the fact that the medical internship could hardly be placed at any other time than following graduation. The practitioner of medicine has few, if any, non-professional responsibilities and hence the student of medicine is not qualified to perform safely any of the duties of the physician until the completion of his college course; nor is he permitted by law to do so. His period of internship is served at a time most advantageous for himself, for the profession of medicine, and for the patient as well.

It sounds quite logical, therefore, to state that pharmacy should capitalize the experiences of medicine and that the embryo pharmacist should also be required to serve a year of internship in an approved pharmacy following graduation, before he is qualified for the practical state board of pharmacy examinations. The two situations, however, are not as similar as they appear to be upon superficial examination. The parallel is apparent, rather than real.

The pharmacy student, during his college course, is well qualified to perform most of the duties and responsibilities of the pharmacists and to obtain such additional training as we wish him to receive, as a supplement to his college training. This can be done with profit to himself and his employer and with safety for all concerned. It is not further training in professional work which the graduate of a four-year course in a recognized college of pharmacy most needs. This is being adequately taken care of both from the practical and theoretical standpoints. He must become familiar with the drug store in all its various aspects and become acquainted with the atmosphere prevailing therein. He must learn to feel at ease in the store, develop poise, learn how to approach customers in a pleasing manner, and discover the most efficient way of presenting goods to the prospective buyer. These are some of the things which can best be learned in the store itself and which make one year of practical drug store experience desirable, if not essential.

There is no reason, however, why such experience should necessarily follow graduation. In fact, it can be obtained to best advantage during the four-year college course. The three months' vacation periods between the sessions of the four college years afford the best opportunity for this work.

When the suggestion of a year's apprenticeship, following graduation, was first made by Doctor Beal many years ago, and later advocated by Doctor Arny in one of our pharmaceutical journals, it was far more appropriate than it is to-day. At that time many colleges were not giving the profound training in practical and dispensing pharmacy which they are to-day offering. Doctor Beal's suggestion was perhaps a good one at the time it was offered. It is unfortunate that it has become antiquated and impractical before being seriously promoted.

I fear it is also not generally clear just how the apprentice would prove more useful to his employer during the year following graduation. He would not be qualified legally to perform any additional professional services. He could not compound prescriptions, sell poison, etc., except under the immediate direction of a registered pharmacist. His usefulness would not be greatly increased. In fact, it is very likely that a college graduate would be less willing to perform certain menial tasks which are essential to his all around training as a pharmacist and which would enable him to be of greatest value to his employer.

The statement that it would be simpler for boards of pharmacy to control practical experience is not a matter of primary importance. Many state boards succeed in keeping an adequate check on practical experience at the present time, even though the task is not an easy one. It is quite possible that this particular responsibility of state boards of pharmacy would be simplified by the proposed change but this advantage is more than counter-balanced by the less favorable considerations which I have enumerated.

A careful study of this question has led me to the following conclusions:

I. That the year of apprenticeship in a drug store following graduation is not analogous to the year of internship in medicine. The conditions are so different as to make it dangerous rather than wise for us to unthinkingly imitate medicine in this detail.

II. More value would be received from the year of apprenticeship if it were synchronized with the college work, rather than following graduation. This has worked out very satisfactorily in the field of engineering and is in accord with the best thought in the field of pedagogy.

III. The apprentice would be of little more value to the pharmacist than before graduation unless the illegal practice of pharmacy is indulged in. The college graduate would be prepared to safely compound prescriptions and would probably be called upon to do so. Do we wish to put ourselves in the position of encouraging such illegal practice?

IV. An important responsibility of the boards of pharmacy might be somewhat simplified but at too great a risk to pharmacy and too great a hardship on the prospective pharmacist.

V. It would lengthen the period of the pharmacist's training from four to five years with no legitimate advantage to anyone. We should favor as much time as may be necessary to train, educate and prepare the pharmacist for his greatest usefulness and no more than this should be required.

I bespeak serious consideration of this question, with a view to making the policy of the Association known at the earliest possible time.

In case the Association feels that it is not in a position to go on record in regard to this matter at this time, I recommend that the executive committee be requested to give the problem careful consideration and present a definite recommendation to the Association at its 1936 meeting.

You have all heard recommendations from some of our members that the minimum course in pharmacy be lengthened from four to five or even six years. Others are advocating one or two years of pre-pharmacy work which might be carried out in such a way as to accomplish the same objective.

These recommendations are, of course, based upon the belief that need exists for men of more profound training, both in pharmaceutical industry and in promoting the possibility of professional services in the field of retail pharmacy.

I wonder if these needs could not be met by encouraging the development of graduate work on the part of such colleges as are in a position to adequately render such services, rather than changing the minimum pharmacy college course at this time. It seems to me that such is the case.

I do not mean by this that there should be a hurried development of graduate work on the part of our member colleges. Rather it should be gone about in a cautious, conservative manner. It is difficult enough to build up a strong staff for undergraduate teaching. It is much more difficult to obtain the services of individuals who can at the same time direct graduate and research work as well. It is likely that there are but few member colleges who are in a position to assume any such responsibility at this time. However, our colleges of pharmacy at the Universities of Florida, Maryland, Wisconsin, Minnesota and Washington, are among those who have set the example as to how it can and should be done.

I suggest that the development of a sound, conservative program of graduate work be considered as the next step in enlarging our educational program.

Such programs should be announced and the work offered, only after adequate graduate facilities, both from a standpoint of teaching and equipment, have been made available.

Few things could be of greater importance in pharmaceutical education than that we should be offering the best possible curriculum to our students. I believe it would prove advantageous if our Committee on Curriculum and Teaching Methods would concern itself more particularly with curriculum problems during the next several years. I realize, of course, that we are represented on a committee whose re-

sponsibility it is to draw up a national Pharmaceutical Syllabus, and I certainly have no desire to reflect unfavorably upon the functioning of that committee.

Following up President Havenhill's suggestion of last year, I recommend that our Committee on Curriculum and Teaching Methods be requested to collect and study all available information bearing upon this important subject. Such material should include the findings and recommendations of the National Pharmaceutical Syllabus Committee and the various curricula as outlined in the catalogs of our colleges of pharmacy. With all this information before them, they should be able to draw up and present to us what might be called "An Ideal Pharmacy College Curriculum." Acceptance of this curriculum in its entirety would not be obligatory on the part of Association members. I am not aiming at greater standardization, but rather the crystallization, from the standpoint of pharmaceutical educators, of the various recommendations with which we are all more or less familiar.

Our committee might see fit to offer several curricula; one to prepare our graduates for retail pharmacy, curricula for various specialties in pharmaceutical industry, and perhaps for pre-medic training as well.

It is likely that after two or three years of operation along this line the report of this committee might become rather brief. I am certain, however, that there would always be something of a worth-while nature to report to us for our consideration.

I trust you will give close attention to the report of Dean Leigh's Committee on the Establishment of a Pharmaceutical Corps in the United States Army. Dean Leigh has given very conscientious and capable attention to the responsibilities of this committee during the past several years.

I am decidedly puzzled as to what the future activities of this committee should be. It might assume a more active, aggressive policy than it has been pursuing, but I believe there are many among us who feel that it would be unfortunate if we were forced to work at cross purposes with the Surgeon General of the United States Army.

I feel that the future policy of this committee should be based solely upon a consideration of the welfare of the enlisted men and the efficiency of the United States Army. Any coveted goal which we might achieve would, I fear, eventually prove disappointing unless we were prompted by the highest motives and objectives in achieving it, and unless we are prepared to render a real, vital, worth-while service, should we prove successful in our endeavor. I hope that Dean Leigh's report may greatly clarify the situation for us.

One of the most encouraging and comforting circumstances in the field of pharmaceutical education with which I am familiar, is the large number of capable, well-trained young men in our ranks who stand ready to assume their full share of responsibility; young men who, I believe, will make full use of our experiences of the past, but who may be possessed of greater freedom of action, due to the fact that they have somewhat less regard for the traditions of the past, than is found in the hearts of older men.

One of our most important responsibilities is to see that full use is made of these younger men. This, I believe, was one of the objectives which Dean Lyman had in mind when he requested the appointment of a "Problems and Plans Committee,"

of which he is now chairman. I see possibilities of this committee developing into one of our most vital and important committees.

As we endeavor to make greater use of the younger men, I trust that they, in turn, will retain an adequate appreciation of the vital need of older, more experienced individuals. I like to picture maturity and youth traveling life's highway hand in hand; the youth pointing enthusiastically to opportunities which only he can clearly see, while the older man skilfully and diplomatically guides him safely past many perils and pitfalls which have escaped his attention, blinded as he is by the brilliance of the opportunities upon which his attention is so keenly fixed.

May this picture represent the condition which is to exist in the A. A. C. P. in the years to come. No condition could be more ideal.

I recommend that the Association make available in inexpensive mimeograph form all of the past presidential addresses of this Association and that ten copies of this material be sent to each member college at the Association's expense.

It is true they are available in the Proceedings. My thought is to place them before our members in more available and convenient form.

I suggest that final decision on this recommendation be left to the Executive Committee after estimates of the cost involved have been obtained.

Your Association has been most active in matters pertaining to pure food and drug legislation during the past year. Our activities along this line have been guided by an exceedingly efficient legislative committee, consisting of Deans Rudd, DuMez and Dean Jordan, *Chairman*.

Dean Jordan and your president spoke before the Committee on Commerce of the United States Senate at a public hearing on Senate Bill S5, Print 3, the so-called Copeland Bill. This bill subsequently passed the Senate, in modified form, but unfortunately was not brought out of committee in the House of Representatives.

I shall refrain from giving more details pertaining to legislative matters at this time, for fear of encroaching on the report of Dean Jordan's Committee. I feel that this committee should be continued and that it should be instructed to play an active part in behalf of legislation intended to promote public health and welfare. I so recommend.

The Dean of one of our Eastern colleges has very emphatically expressed the opinion that the A. A. C. P. should concern itself solely with matters of pharmaceutical education, leaving pure food and drug legislation, pharmacy corps in the United States Army and similar problems to the A. PH. A., N. A. B. P., N. A. R. D. and related pharmacy organizations.

I certainly agree that the major responsibilities of the A. A. C. P. are in the field of pharmaceutical education. I recognize the danger of spreading one's energies too thinly, but I also feel that it would be most unfortunate if we did not stand ready to lend a helping hand wherever possible in the general field of pharmacy. I do not feel that any organization should consider that its activities must be forever limited by the purposes set forth in its constitution.

It is only by properly coördinated and, not infrequently, by overlapping activities of these various organizations, that the greatest good can be accomplished in behalf of pharmacy.

I recommend the appointment of a professional relations committee whose

responsibility shall be to bring before our members the ways and means which are being employed in the various states, of increasing the professional services of the retail pharmacist and improving his contacts and relationships with physicians and dentists. The efficient functioning of such a committee should make it possible for our colleges of pharmacy to more effectively coöperate in increasing the professional services of our present and future retail pharmacists.

I am pleased to report to you that our Association has been admitted to membership as one of the affiliated organizations of the American Association for the Advancement of Science. Membership in this respected and influential organization gives a contact which will add to the dignity and prestige of our Association as a professional group. I feel that we should make the most of this new contact.

A most creditable pharmacy program was presented at the Minneapolis meeting, held June 27th of this year. This program was presented in conjunction with the division of Medical Sciences, under Section N, of the associated societies.

At the St. Louis meeting, to be held from December 30, 1935 to January 4, 1936, pharmacy will have the opportunity and decided responsibility of again presenting such a scientific program. This new venture will prove to be either a splendid asset or a decided liability to our Association and to the profession of pharmacy. It is most essential that the project succeed and that the A. A. C. P. play its full part in insuring such success.

I recommend that, for the ensuing year, the Executive Committee be made responsible for the A. A. C. P. activities in this scientific program and that at the 1936 annual meeting they recommend to us that, which in their judgment, is the best permanent policy for this Association to adopt in this connection.

I am sure we all agree that a joint meeting with the American Medical Association or American Dental Association would prove most helpful to pharmacy and to the medical and dental professions as well. I fear that many of you are already questioning the wisdom of spending even a few minutes discussing a recommendation which is so obviously impossible of attainment. The solution of any problem is made immeasurably more difficult if approached with an attitude of defeatism.

There never was a time when physicians and dentists were more willing and eager to coöperate with the pharmacist than they are to-day. I believe it is within the realm of possibility that such a meeting or meetings can be arranged.

I recommend that the incoming officers and members of the Executive Committee be directed to give serious thought to this proposed project and that they be requested to present a report of their deliberations at the 1936 meeting. This is one of several projects which might well be referred to a committee on professional relations.

If it seems impossible to arrange such a joint meeting, in the sense of sharing a half-day joint program with either one of these organizations, it is possible that permission would be given us to place a speaker on the program of one of their annual meetings. Such a speaker should be able to diplomatically and effectively point out the need for greater coöperation between these three professional groups and perhaps pave the way for a future joint meeting.

I have the very definite feeling that if this general problem is given careful consideration, the Executive Committee will be able to present to us a recommendation possible of attainment, which will prove an effective start in the right direction.

I wish to thank our secretary, the chairman of the Executive Committee, our vice-president, committee chairmen and the other officers and members of the Association for the really fine, helpful support and coöperation which has been accorded me during the past year. Without such coöperation but little of value could have been accomplished. With it, the past year has proved to be a most happy and prosperous one, at least so far as your president is concerned.

ADDRESS OF THE PRESIDENT OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

BY CHARLES HALL EVANS, PRESIDENT.

Mr. Chairman, Members of the National Association of Boards of Pharmacy and Guests:

In selecting "The City of Roses" as the meeting place for the thirty-second annual convention of the *National Association of Boards of Pharmacy*, we have chosen a section rich in historical tradition and one noted for its scenic beauty.

Only a short distance away is the Pacific Ocean. Mount Hood with its snow fields and glaciers, vast stands of forest, jewel-studded lakes, the beautiful Columbia River Highway, Bonneville Dam and Multnomah Falls are but a few of the many wonderful sights within easy reach of this beautiful city.

CHARLES HALL EVANS.

In coming to Portland, we are meeting for the first time in the history of the Association in the Great Pacific Northwest; in fact, it is the first time in twenty years that we have held a meeting west of the Rockies, the San Francisco meeting of 1915 being the last.

We who live in the densely populated sections of the country where most of the conventions are held can attend the meetings every year with little effort and expense. These meetings mean something to us beyond the formal program and the business transacted. There is the opportunity of getting acquainted with brother examiners from other states, who have the same interest and the same problems as we have, and a bond of common understanding results. It is on this spirit of mutual coöperation that confidence between boards rests; it is the very foundation of the Association itself.

I want to remind you that our Western friends have been denied this privilege because of certain economic and geographic barriers. We have broken the isolation this year by coming out here for the convention and they have responded most whole-heartedly by attending the sessions we have planned. At the most, we have only a few days together, so let us make the best possible use of them by getting acquainted immediately.

To our Western colleagues, I want to say that your problems are our problems and while a formal program is necessary to cover the business of the Association, you are most welcome to interrupt at any time and ask questions.

ASSOCIATION ACTIVITIES.

Economic conditions the past few years have made it necessary for us to outline and adhere rather strictly to a budget for operations, and we had to cut operations sometimes in certain directions when we did not want to do so. But the policy has been a sound one, as our financial condition to-day indicates. We held our 1934 convention before the close of the fiscal year but I am glad to inform you you that when the books were closed as of June 30, 1934, we showed a gain of some $400.00, instead of drawing on cash reserves as we had been doing for the three previous years.

The budget for this year was outlined on the basis of $15,000.00 income from dues and reciprocal applications, with an estimate of 500 applications to be issued. However, at the time this address is being written, I am informed that more than 600 applications have been issued which indicates that the financial reports this year will be even better than last. As the details will be given in the reports of the secretary and the treasurer, as well as the Executive Committee, I shall omit them here.

DISTRICT MEETINGS.

Since the Washington convention, Districts Nos. 1, 2, 4, 5 and 6 have held meetings, and I am informed that District No. 7 will hold a session here in Portland on Wednesday. This is a splendid record, and I want to thank the vice-presidents for the whole-hearted coöperation they have given me.

Also, I want to thank you for the invitations to attend these district meetings; I wish I could have been present at every one of them. I did attend the Sixth District meeting at New Orleans. Mac Childs, the acting chairman, had worked out an excellent program and the meeting was well attended.

One of the greatest benefits that we derive from our district meetings is the friendly fellowship which develops between the board and college members of the group. We get to know our neighbors more intimately and we find that our problems in reciprocity and in examinations are more easily met when thorough understanding exists.

While I would not minimize the great good accomplished at these meetings, yet there is a grave danger when measures are sponsored which break away from the ideal of national uniformity which is the primary purpose of the Association. We must remember that a condition that may prove ideal in a particular district may not work out well in other districts, or nationally. We must give consideration to the make-up of the various districts, the distances covered, the population, the number of colleges of pharmacy, and other factors that make each district different from the others.

Each district has a certain amount of business to transact which is of local import only, which has no effect on national policies. On matters of national import, great care should be exercised by those in charge of the program to see that the time is not spent in discussing new and untried ideas which may be suitable

for the particular district concerned but which would not receive the majority support necessary to make them effective nationally. Such discussions really harm the cause of uniformity.

We must make progress, we cannot stand still. Times and conditions are rapidly changing, yet we should be ever mindful of the cardinal objectives of this Association as laid down in our Constitution.

Before we leave the basic principles, as yet unfinished, let us see to it that all the districts have caught step with the march before we proceed with new objectives, that may retard progress on the goals nearly attained.

RECIPROCITY.

Article 2 of our Constitution states the object of this organization to be the promotion of "inter-state reciprocity in pharmaceutic licensure, based upon a uniform minimum standard of pharmaceutic education and uniform legislation, and to improve the standards of pharmaceutical education and licensure by co-operating with State, National and International agencies and associations having similar objects."

While the subject of reciprocity has been discussed fully every year, yet as stated in Article 2 just read, it is the corner-stone of the N. A. B. P.

Reciprocity boiled down is essentially the application of common sense. With the constantly changing personnel of our boards of pharmacy, reciprocity has been in "hot water" in some states due to a desire on the part of the inexperienced members to adhere strictly to the letter of the law rather than to use the discretionary powers vested in the board of pharmacy under that law. An educational program undertaken by the older and more experienced members of the board to instruct these new members in such matters would overcome the friction and save the Secretary's office much unnecessary correspondence.

LEGISLATION.

Chairman Mac Childs of the Legislative Committee will cover this phase of our activities in his usual efficient manner. I shall not make other comment than to say that we welcome Arizona and New Mexico to the list of states requiring college graduation for entrance to the board examination and congratulate them. Several other states tried and failed; we can only urge them to try again at the next session. Iowa also is to be congratulated on having increased its two-year college attendance requirement to college graduation. Also a few of the states cut experience requirements to one year, in view of the four-year course. Thus the steady march of progress toward a uniform goal goes on.

Let us as an Association, and especially the bordering neighbor states, lend every possible assistance to the five remaining states without any provision for compulsory college education: Delaware, Massachusetts, Nevada, Tennessee and Vermont, so that they may attain this goal by the year 1940 as set out in the recommendation of President Gilbert last year.

CONVENTION ATTENDANCE.

A vigorous effort on the part of the N. A. B. P. should be made to increase the average yearly attendance at the conventions. There are probably other reasons

for non-attendance but "lack of funds" seems to be the main cause. Out of 49 member boards, only 30 send delegates regularly.

In those states where funds are not available for traveling expenses from the board or the state treasury, the state pharmaceutical associations should be called upon for help. The initiative for such a move rests with the older board members who understand the importance of such representation, it is up to them to stress it at the state association meetings. Certainly, the pharmacists of each state are entitled to at least one delegate to represent their interests at a meeting where rules which affect the reciprocal privileges of every pharmacist are made.

In most states, the governor makes his appointments to the board of pharmacy from a list submitted by the state pharmaceutical association. Fitness as an examiner should be the first consideration, of course. However, there are usually many contenders for the honor of serving on the board; here again the ex-board members can be of service by urging the selection of those who are willing and able financially to make certain sacrifices that should go with the honor, namely, willingness to attend the N. A. B. P. conventions at their own expense when necessary. I am including a recommendation covering these points at the conclusion of this address.

BOARD APPOINTMENTS AND HIGHER STANDARDS.

In 1936, the first four-year classes will be presenting themselves for board examinations. As an organization, the N. A. B. P. has done much to promulgate these higher standards. With a better class of student now entering the profession, the next step would seem to be improvement of our own board examinations. As the examiner is a political appointee with full power to act, only diplomatic persuasion can be used; assistance, usually, cannot be rendered unless it is requested.

The system of having the recommendations for the appointments come from the pharmaceutical association has released the governor from responsibility to a great extent and placed it with the profession itself. Have we taken this duty too lightly in the past? It is true that we have had honest, conscientious men, but have they always been the most capable or the ones best fitted to undertake examination work? Has it not become more or less a habit to award the state board appointments to those who have been most active in state association work? Are such persons always the best examiners? True, they do deserve glory for having given the time and effort it takes from selfish interests to further the interests of the state group as a whole. But such men often have devoted much time and thought to the legislative and commercial angles, such as fair trade practice bills, working with manufacturers to better conditions, and have had little time left for the study to fit themselves for specialized examination work. In each state, if you search, you will find men with a particular bent for the professional angle, who keep abreast of the developments in modern chemistry and medicine, because they are interested in these things. They may not have done a great deal of committee work in the state association, or they may not have held office, but they are peculiarly fitted for board examination work. Isn't it to our own interest to give them an opportunity to render service instead of trying to fit a square peg in a round hole?

All that I say is not meant in any spirit of criticism of members now serving on the boards or of those who have served in the past. We have now and have had in

the past many exceptionally capable men; but how much more we could accomplish if *all* board members were of this type. Under the four-year course requirement, the candidates who come to us will be better-grounded in the fundamental sciences and our board members must be able to meet them on the same plane or criticism will result. Already, there is evidence of such a critical trend.

I believe that this is a situation which should be brought to the attention of the state pharmaceutical associations by the N. A. B. P. and with this in mind, I have formulated a recommendation at the conclusion of this paper. If adopted, a copy is to be transmitted to each state association by our secretary.

IN MEMORIAM.

Each year it is the duty of the President to report the deaths of those from our ranks, both active and past members, who have passed on to their final reward. The list includes:

W. E. Bingham, Alabama
F. T. Hafelfinger, District of Columbia
Alex F. Peterson, Montana.

At a later session we shall allow their colleagues to pay a more fitting tribute to their memory but at this time, I think it appropriate that we stand for a moment with bowed heads in silent tribute to the memory of these departed friends.

In the passing of Dr. Bingham, the N. A. B. P. has lost one of her oldest and best loved friends as well as her first Honorary President. Only those who have been associated with him in the work these many years can understand how much he has meant to us.

CONCLUSION.

I appreciate deeply the honor that has been accorded me as the first Georgian to be elected to the presidency of this great organization. If you will refer to your map, you will see that I have traveled from the next to the last state on the southeastern boundary of the United States to the next to the last state in the northwestern part to attend this meeting. I am sure that a trip like this must inspire in every one who takes it a greater love of country, especially in those from eastern, central and southern states where space is more limited.

I want to thank the committees, the vice-presidents and the other officers for their splendid coöperation during my term of office.

Secretary Christensen has forwarded me copies of the most important correspondence of his office, and I have become acquainted with the great amount of work attached to the central office. I want to commend Secretary Christensen and the entire personnel of his office for the very efficient manner in which the work of the Association is carried on.

As I step back into the ranks, I want each one of you to know that I am ready and willing at all times to answer any call for the promotion of pharmacy.

There are many vital issues at stake in these times. There is a clarion call for leadership from the ranks of the pharmacists of the nation. Aside from the Pharmacy Corps legislation, the Pure Food and Drugs Act and the professional and commercial pharmacy question, there are many issues of a strictly commercial or

economic nature that will require the coöperation of all pharmacists everywhere and unified leadership.

May we as board members and enforcement officers accept the challenge and institute in our own stores and communities an educational program that will place pharmacy where she belongs and give her rightful professional recognition!

Recommendations:

Resolved, That in the interest of bringing about closer coöperation between states, every board of pharmacy should be represented at the annual N. A. B. P. conventions. Where the state treasury allows no such budget, the state pharmaceutical association should make some provision for sending a board delegate to represent the interests of the pharmacists of that state. Where neither the state treasury nor the pharmaceutical association can assume this expense, some consideration should be given to the willingness of board members personally to make such a sacrifice when the appointment lists are made up, but not overlooking the fact that fitness as an examiner should be the first consideration.

Resolved, That the N. A. B. P. ask the coöperation of state pharmaceutical associations by requesting that the first consideration in submitting lists of appointees to the governor for appointment to the board should be the fitness of such persons as examiners, rather than activity in state association affairs, the object being to improve the quality of state board examinations in the future.

REPORT OF THE FAIRCHILD SCHOLARSHIP COMMITTEE.

The Fairchild Scholarship Committee of this year is composed of Robert P. Fischelis, Ernest Little, C. H. Evans and E. G. Eberle, *Chairman*. The University of Michigan, among others, presented no candidates for the examination and the Director of the School of Pharmacy, Howard B. Lewis, with the assistance of members of the Pharmacy faculty, consented to prepare the questions for the examination and grade the answers.

FERDINAND ZIENTY.

Twenty-one candidates participated in the examination representing twelve schools. The examinations were given under three subjects: Pharmacy, Chemistry and Materia Medica. The highest average was made in Pharmacy, next in Materia Medica, lowest, Chemistry. The lowest average was made in Chemistry, next in Pharmacy, next in Materia Medica. Candidates of the same school did not have closely related records. The candidate making the highest average tied with another for second place in Chemistry, was first in Materia Medica and first in Pharmacy. The second in rank was sixth in Chemistry, third in Materia Medica and sixth in Pharmacy. The one ranking lowest in general average was lowest in Chemistry, was next to the lowest in Materia Medica and next to the lowest in Pharmacy. The one lowest in Materia Medica rated next to the lowest in Chemistry and twelfth highest in Pharmacy. No further effort has been made to draw deductions.

The candidate making the highest average in the Examination for 1935 is Ferdinand Zienty of Chicago, Ill. His standing was high both in High School and Junior College and he was commended as "an energetic young man of fine character."

The winner of the Fairchild Scholarship for this year was graduated from the University of Illinois College of Pharmacy with high honors, receiving "A" in every subject except one, Physiology, in which he was graded "B." He graduated from the 4-year course; the last year's subjects included Food Analysis and Microscopy of Foods. The first-year course is administered as a pre-pharmacy year of 30 semester hours of work in liberal arts and science in an accredited college and including certain specified subjects such as English, General and Organic Chemistry, and Mathematics (Algebra and Trigonometry).

Mr. Zienty was awarded the degree of Bachelor of Science by the University of Illinois. He intends to continue his studies in Pharmacy.

The Committee desires to thank Director Howard B. Lewis and members of the faculty of the University of Michigan, School of Pharmacy, for their coöperation.

(Signed) ROBERT P. FISCHELIS, C. H. EVANS, ERNEST LITTLE, E. G. EBERLE, *Chairman*.

LIST OF REGISTRANTS, ANNUAL MEETING, A. PH. A., PORTLAND, OREGON.

Corrections and additions are respectfully requested; a number evidently failed to sign the official Registration Book; the names are given as recorded. Please address JOURNAL AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Ave., N. W., Washington, D. C.

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REDDISH, G. F., St. Louis, Mo.
RHODES, W., Portland, Ore.
RICHARDS, LEON W., Missoula, Mont.
RISING, L. W., MR. AND MRS., Seattle, Wash.
RIVARD, A. L., Missoula, Mont.
ROBERTSON, R. V., MR. AND MRS., Spokane, Wash.
RODMAN, R. W., New York City.
ROSIN, L., Plainfield, N. J.
ROWE, L. W., MR. AND MRS., Detroit, Mich.
ROWE, T. D., Missoula, Mont.
RUDD, W. F., MR. AND MRS., Richmond, Va.
RUDDUCK, HERBERT INMAN, MR. AND MRS., Champaign, Ill.
RUTHERFORD, W. E., Santa Rosa, Calif.

SCHAEFER, E. K., Yonkers, N. Y.
SCHAEFER, F. C. A., MR. AND MRS., Brooklyn, N. Y.
SCHAEFER, HUGO H., MR. AND MRS., New York City.
SCHEODUBERG, C. H., Portland, Ore.
SCHICKS, G. C., Montclair, N. J.
SCHLICHTING, ARTHUR F., St. Louis, Mo.
SCHNAIDT, H. J., MR. AND MRS., Parkston, S. Dak.
SCHWARTZ, C., JR., Seattle, Washington.
SERLES, E. R., Brookings, S. Dak.
SEVERIN, C. E., Philip, S. Dak.
SHEA, T. S., Worcester, Mass.
SHULTZ, R. C., MR. AND MRS., Worland, Wyo.
SHURTLEFF, F. C., Wenatchee, Wash.
SKEELS, H. M., Reno, Nev.
SNOW, C. M., MR. AND MRS., Chicago, Ill.
SNYDER, LOUIS E., Philadelphia, Pa.
SPEASE, EDWARD, MR. AND MRS., Cleveland, Ohio.
STABLER, LAIRD J., Los Angeles, Calif.
STIPE, EDGAR, Portland, Ore.
STOVALL, LAWRENCE S., MR. AND MRS., Maupin, Ore.
STROUP, FREEMAN P., Philadelphia, Pa.
STUHR, E. T., MR. AND MRS., Corvallis, Ore.
SUCHY, J. F., Missoula, Mont.
SUGAHIRO, R. E., Portland, Ore.
SWAIN, R. L., Batimore, Md.
SWISHER, MARGARET C., Buffalo, N. Y.

TAYLOR, VICTOR RAY, Portland, Ore.
TEETERS, W. J., Iowa City, Iowa.
TEMPLETON, L., MR. AND MRS., Chicago, Ill.
THOMPSON, T. C., MR. AND MRS., Los Angeles, Calif.

UHL, A. H., Madison, Wis.
ULSH, ROBERT T., Portland, Ore.

VARNUM, W. H., MR. AND MRS., Lawrence, Kans.
VINCENT, HUGH C., Pullman, Wash.

WALTON, L. L., MR. AND MRS., Williamsport, Pa.
WARD, JUSTUS C., Denver, Colo.
WARNACK, ROY S., Los Angeles, Calif.
WASHBURN, H. C., Boulder, Colo.
WEIS, HARRY L., Portland, Ore.
WENZ, BELLE, Pullman, Wash.
WHELPLEY, MRS. L. E., St. Louis, Mo.
WHITE, MRS. MAX., Spokane, Wash.
WHITNEY, H. A. K., Ann Arbor, Mich.
WILSON, A. P., MR. AND MRS., Portland, Ore.
WILSON, R. C., MR. AND MRS., Athens, Ga.
WINNE, A. L. I., Richmond, Va.
WITTY, JOHN, Portland, Ore.
WULLING, FRED J., Minneapolis, Minn.

YOUNGKEN, H. W., Boston, Mass.

ZIEFLE, ADOLPH, MR. AND MRS., Corvallis, Ore.
ZIMMERMAN, ALBERT, MR. AND MRS., Peoria, Ill.
ZIMMERMANN, C. J., Peoria, Ill.

ASSOCIATION BUSINESS

AD INTERIM BUSINESS OF THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1934–1935.

Office of the Secretary, 2215 Constitution Ave., Washington, D. C.

LETTER NO. 21.

July 19, 1935.

To the Members of the Council:

107. Printing and Binding the Recipe Book II. Motion No. 35 (Council Letters 19, page 581, and 20, page 583) has been carried and the contract is awarded to the Mack Printing Company.

108. Election of Members. Motions Nos. 36 and 37 (Council Letters 19, page 582, and 20, page 583) have been carried and applicants for membership numbered 219 to 261, inclusive, are declared elected.

109. Distribution and Sale of the National Formulary VI and the Recipe Book II. The following communication has been received from Chairman DuMez of the Committee on Publications:

"Invitations for Bids for the Distribution and Sale of the National Formulary, Sixth Edition, and of the Recipe Book, Second Edition, were recently issued in accordance with Motion No. 13 (Council Letter No. 8, page 1245), to the following firms to whom invitations for Bids for the Distribution and Sale of the U. S. P. XI were sent at the same time:

William Wood & Co., 51 Fifth Ave., New York, N. Y.
W. B. Saunders & Co., W. Washington Square, Philadelphia, Pa.
P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa.
Lea & Febiger, 706 Sanson St., Philadelphia, Pa.
J. B. Lippincott Co., E. Washington Square, Philadelphia, Pa.
D. Appleton & Co., 29 W. 32nd St., New York, N. Y.
William F. Fell, 1315 Cherry St., Philadelphia, Pa.
William J. Doran, 7th & Arch Sts., Philadelphia, Pa.
McGraw-Hill Publishing Co., 320 W. 42nd St., New York, N. Y.
Mack Printing Company, Easton, Pa.

"It will be recalled that these firms were requested to bid $3.34 per copy and additional on the N. F. VI and the R. B. II, in buckram binding, and $4.67 per copy and additional on the N. F. VI in leather binding.

"Bids were received from the Williams and Wilkins Company, P. Blakiston's Son & Co., and the Mack Printing Company. Several of the firms declined to bid.

"The bid of the Mack Printing Company is the highest at $3.34 plus 25 cents or $3.59 per copy for the N. F. VI and the R. B. II, in buckram binding, and $4.67 plus 40 cents or $5.07 per copy for the N. F. VI in leather binding and is identical with their bid for the U. S. P. XI. This company also agrees that transportation charges will be prepaid on all copies sold at the full retail prices and have listed twenty-two publications in which the books will be advertised, which are satisfactory.

"The Board of Trustees has accepted the bid of the Mack Printing Company for the distribution and sale of the U. S. P. XI. In addition to the large return to the A. Ph. A. which their bid will yield, there are advantages to be expected from having the same firm distribute and sell the U. S. P. XI, N. F. VI and R. B. II, especially as this firm is printing and binding the books.

"It is believed that the Mack Printing Company is sufficiently experienced through its various connections, to carry out the contract successfully and I recommend that the contracts for the distribution and sale of the N. F. VI and R. B. II be awarded to the firm on the basis of its bid."

(*Motion No. 38*) *It is moved by DuMez that the contracts for the distribution and sale of the National Formulary VI and the Recipe Book II be awarded to the Mack Printing Company, Easton, Pa., on the basis of their bid.*

Chairman DuMez requests that a vote be called for at this time in order that, if possible, the contracts may be completed promptly. The vote will be considered as tentative if there is objection or if any member of the Council desires to comment or to have additional information.

110. *Applicants for Membership.* The following applications properly endorsed and accompanied by the first year's dues have been received:

No. 262, Nicholas B. Solonen, 615 E. 4th St., Muscatine, Iowa; No. 263, Geo. Roeder, P. O. Box 131, Rahway, N. J.; No. 264, John C. D'Arienzo, 131 Sheridan Ave., Paterson, N. J.

(*Motion No. 39*) *Vote on Applications for membership in the American Pharmaceutical Association.*

E. F. KELLY, *Secretary.*

LETTER NO. 22.

August 3, 1935.

To the Members of the Council:

The Second Meeting of the Council for 1934–1935 was held at Multnomah Hotel, Portland, Oregon, on Saturday, August 3, 1935, beginning at 10:20 A.M., with the following members present: Hilton, Fischelis, Beal, Arny, Christensen, Adams, Geo. D. Beal, Eberle, DuMez and Kelly.

111. Election of Members. The secretary reported that Motion No. 39 (Council Letter No. 21, page 682) had been carried and that applicants for membership numbered 262–263 and 264 are declared elected.

112. Minutes of the Council. On motion of Arny—Adams, the minutes as printed in the JOURNAL were accepted.

113. Use of Text of N. F. VI. The following letter from Secretary Leech of the Council on Pharmacy and Chemistry of the American Medical Association was read:

July 18, 1935.

> Please convey to the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION the grateful appreciation of the Council on Pharmacy and Chemistry for permission to use certain portions of the text of the National Formulary, Sixth Edition, in the forthcoming editions of:
>
> Useful Drugs
>
> Epitome of the U. S. Pharmacopœia and National Formulary
>
> Hospital Practice for Interns.
>
> This is to be without charge.
>
> It is understood of course that the publications including this text will not appear until after the National Formulary VI is issued, and furthermore that the suggested statement of permission will appear on the back of the title page.
>
> (Signed) PAUL NICHOLAS LEECH, *Secretary.*
> Council on Pharmacy and Chemistry.

114. Committee on Finance. The following letter and report from Chairman Philip were read:

July 29, 1935.

> It is with deep regret that I am forced to be absent from the council and the meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION held this year in Portland, Oregon.
>
> To members of the council I send greetings. I know the council's deliberations will be in the interest of the AMERICAN PHARMACEUTICAL ASSOCIATION, the Profession of Pharmacy and in the activities of our ASSOCIATION from the new magnificient Headquarters Building here in Washington.
>
> (Signed) W. BRUCE PHILIP.

The Committee on Finance respectfully submits to the Council the usual summary of receipts and disbursements for the first six months of the year.

It is to be noted that the estimated budget for 1935 was fairly accurate as to receipts and disbursements. $16,002.40 has been received, and $15,625.82 paid out.

No budget allowance for the year has been exceeded during this period and the majority of the budget allowances will carry the respective expenses for the year. It is to be expected that items such as the National Formulary will just prior to the issuance of a new volume, be low in receipts and proportionately higher in expense.

There are also other items as fuel, when the expense is heavier in the winter months.

In addition to this brief summary of budget receipts and disbursements, the Committee desires to report to the Council with respect to the sale and transfer of the following bonds: Under the Second and Third Calls, October 15, 1934 and April 15, 1935, $21,800.00 in Fourth Liberty Loan 4 1/2% Bonds were called for payment. Under authority of the Council, the secretary and treasurer of the ASSOCIATION exchanged the bonds for U. S. Treasury 2 7/8% Bonds with the exception of three $100.00 bonds in the Endowment, Centennial and Procter Monument Funds, respectively, which were cashed and three $1000.00 bonds in the Life Membership Fund which were cashed and the proceeds transferred to the Current Fund—one in the fall and two in the spring. It was necessary to pay a premium of 1 22/32 on the $6000.00 bonds subject to the second call; the $12,500.00 bonds subject to the third call were exchanged on an even basis.

The treasurer is keeping a separate account of all investments for the Headquarters Building property and equipment. The amount to July 31, 1935 was $572,196.07.

On motion Adams—Geo. D. Beal, the report was accepted and filed.

115. Committee on Property and Funds. Chairman Fischelis read the following report:

ARTICLE III of Chapter II of the By-Laws of the Council provides that this committee "shall have charge of the administration of all the property and established funds of the ASSOCIATION" and that "the committee shall consider applications for grants from the interest derived from the established funds and at as early a date as possible shall report to the Council such recommendations as may be deemed proper." The personnel of the committee is definitely provided for in the By-Laws of the Council and consists of the President, the Treasurer, the Chairman of the Council, the Chairman of the Committee on Finance and the Secretary of the ASSOCIATION.

The report of the treasurer presents, in detail, the status of the various funds which have been established from time to time for specific purposes under the custody, or administration, of the AMERICAN PHARMACEUTICAL ASSOCIATION. We have been advised by one of the Executors of the estate of the late Frederick B. Kilmer that a bequest of $3000.00 has been made by him to the AMERICAN PHARMACEUTICAL ASSOCIATION in Clause 6 of his will which reads as follows:

> "6. I give and bequeath unto the AMERICAN PHARMACEUTICAL ASSOCIATION, organized under the District of Columbia, the sum of Three Thousand Dollars, to be held in trust, the income to be applied to the awarding of a prize for meritorious work in pharmacognosy, such prize to be known as 'The Kilmer Prize,' or an equivalent designation. In awarding the prize preference to be given to studies in vegetable drugs. The recipient of the prize shall be a graduate in pharmacy. Teachers in colleges of pharmacy, workers in pharmaceutical laboratories, are to be excluded from competing for the prize. Prize to be awarded under such conditions as the ASSOCIATION may elect. Funds arising from the income which may not be used are to be added to the amount of the prize or added to the principal, as the ASSOCIATION may elect."

To date the estate has not been finally settled so the bequest has not been officially received. It is likely, however, that it will be received in time for an award to be made under the provisions of the bequest by the time of our 1936 convention. The committee therefore recommends that an announcement of the nature of the bequest be made at one of the General Sessions of the Portland Convention and at one of the meetings of the Scientific Section and the Section on Practical Pharmacy and Dispensing, respectively. The Committee further recommends that if there is to be established in the ASSOCIATION a permanent Commission on Awards, this Commission be instructed

to set up the necessary rules and regulations for carrying out the desires of the donor and that the award be known as the "Kilmer Prize."

It is further recommended that notice of the establishment of the Kilmer Prize and rules governing its award be furnished all State Pharmaceutical Associations and other groups of pharmacists whose members may be stimulated to carry on researches along the lines contemplated by Dr. Kilmer.

No applications for grants from the interest derived from the established funds have been referred to the Committee.

In this connection the chairman desires to raise the question as to the scope of the duties of the Committee in the light of our recently acquired building. If this Committee is to "have charge of the administration of all property" of the ASSOCIATION, as indicated in the By-Laws, it must be looked upon as the Committee on Administration of the headquarters building. If, on the other hand, such administration is not contemplated, then the By-Laws should be changed or definitely interpreted on this point. At any rate there should be some constituted authority with respect to the management and administration of the building. The Council should definitely dispose of this question at once.

Following the precedent of former committees, we recommend the following banks and safe deposit vaults as depositories for funds, securities and records of the ASSOCIATION:

DEPOSITORIES FOR FUNDS.

The Baltimore Trust Company, Baltimore, Md.
The Baltimore National Bank, Baltimore, Md.
The Maryland Trust Company, Baltimore, Md.
The Merchants and Newark Trust Co., Newark, N. J.
The Boston Penny Savings Bank, Boston, Mass.

DEPOSITORIES FOR SECURITIES AND RECORDS.

The Baltimore National Bank, Baltimore, Md.—Safe Deposit Boxes.
The Maryland Trust Company, Baltimore, Md.—Safe Deposit Boxes.
The Merchants and Newark Trust Co., Newark, N. J.—Safe Deposit Boxes.

The report was received and the recommendations taken up seriatim on motion Arny—Geo. D. Beal.

Kilmer Prize: On Motion of Adams—Christensen, the three recommendations with respect to this prize were approved.

Headquarters Building: It was moved by DuMez—Arny that the administration of this property be under the Committee on Property and Funds in accordance with the By-Laws of the Council.

Depositories: The depositories recommended were approved on motion Eberle—DuMez.

The report of the chairman was then approved as a committee report on motion of Arny—DuMez.

116. Committee on Publications. The following report was read by Chairman DuMez:

Your Committee on Publications respectfully submits the following report on its activities for the year 1934–1935, and on the status of the publications of the ASSOCIATION.

"*Journal:* The total expenditures for the publication of the JOURNAL for 1934, including the Editor's salary, were $19,236.50 ($14,236.50 + $5000.00). This is $1023.55 more than was expended the preceding year, the amount expended for this purpose in 1933 being $18,212.95 ($13,212.95 + $5000.00).

"The receipts of the JOURNAL for advertising, subscriptions, sale of single copies, reprints. etc., for 1934 were $9289.34, which is an increase of $1389.34 over the preceding year when the receipts were $7900.00. The subscription credit received from non-headquarters building members, less 20% for overhead, amounted to $4235.14, making a total of $13,524.48. The total receipts for 1933 were $12,234.26.

"The total expenditures of $19,236.50 less the total receipts of $13,524.48 give $5712.02 as the net cost of the JOURNAL for 1934. The net cost for 1933 was $5978.68. A reduction of $266.66 was, therefore, effected in 1934, and is to be attributed mainly to gains made in the sale

of subscriptions to the JOURNAL, single copies, reprints, etc., rather than to an increase in income from advertising.

"The contract for publishing the JOURNAL was again awarded to the Mack Printing Company of Easton, Pa., on the basis that the award be made to the lowest bidder, and because of satisfactory service which this firm had given us in the past.

"Beginning with the March issue for this year (1935), there has been published monthly in the JOURNAL a section of approximately 36 pages of Pharmaceutical Abstracts. This new feature recommended by the special committee appointed several years ago to study the matter and adopted by the ASSOCIATION in convention last year appears to have been well received by the users of the JOURNAL, if the favorable comments on the new section received by Editor Eberle and your chairman may be used as a basis for forming an opinion. The new arrangement would seem to appeal particularly to teachers and research workers and should result in some increase in the number of JOURNAL subscriptions.

"The foregoing constitutes the first step in the inauguration of the new policy of the ASSOCIATION with respect to the publication of the JOURNAL and the YEAR BOOK. We have discontinued the YEAR BOOK as such and have added a section on Pharmaceutical Abstracts to the JOURNAL. The next step is the publication of a new popular type of journal which will appeal to the rank and file. In addition to items of interest to the average pharmacist, such a journal would carry all of the miscellaneous material published in the present journal, thus making available additional space for the publication of scientific and professional papers.

"*Year Book:* Volumes 21 and 22 of the YEAR BOOK of the ASSOCIATION covering the years 1932 and 1933 have been printed and distributed since the last annual meeting which leaves only the preparation of the report of the Reporter on the Progress of Pharmacy for 1934 to complete the series. The work on the preparation of the latter which will constitute Volume 23 of the series of YEAR BOOKS is more than half completed at this time and it is expected that the book will be ready for distribution about the first of the new year.

"The contract for printing, binding and distributing these volumes was again awarded to the Lord Baltimore Press of Baltimore, Maryland, because the estimates of this firm on the cost of doing the work were the lowest in both instances. Two thousand copies of Volume 21 were ordered and 1750 copies of Volume 22. Up to the present time only 1100 copies of the latter have been distributed.

"The sum of $1000.00 to be used in defraying a part of the cost of preparation and publication was again contributed by the Board of Trustees of the United States Pharmacopœial Convention.

"Copies of the YEAR BOOKS, Nos. 1–5, 7–12 and 14–21, were donated to the Library of Congress by authority of the Council.

"*National Formulary V:* Up to June 30, 1935, a total of 51,051 copies of the National Formulary V were printed and bound, 50,551 in buckram and 500 in leather. Of the total number of copies bound in buckram 50,000 were sold and 88 were distributed as complimentary copies. Of the copies bound in leather, 103 were sold and 12 were given away. The remaining 463 copies bound in buckram and the 385 copies bound in leather constituted the stock on hand as of June 30, 1935.

"Permission to use portions of the text of the National Formulary V for comment in other publications was granted to the following: School of Medicine of Duke University, for use in the preparation of a Hospital Formulary; J. B. Lippincott Co., for the publication of a textbook on prescription writing by Dr. Charles Solomon; Morris Dauer for use in the preparation of a 'Formulary for Physicians.' Permission was granted to the American Medical Association to use portions of the text of the National Formulary VI for comment in 'Useful Drugs,' 'Hospital Practice for Internes' and 'Epitome of the United States Pharmacopœia and the National Formulary.' The foregoing permission was granted with the definite understanding that no comment would be published until after the appearance in print of the new edition of the National Formulary.

"The contracting for printing and binding the National Formulary VI was awarded to the Mack Printing Company in August 1933, but no provision for the sale and distribution of the book was made at that time. This matter has, however, been given consideration during the past several months. Invitations were sent out to the publishers qualified to handle the job to submit

estimates on the cost of sale and distribution, and on the basis of the estimates received, the chairman of the Committee on Publications recommended to the Council that the contract be awarded to the Mack Printing Company. A vote has been called for and it is hoped that it will be favorable because there is not much time remaining before the expected date of appearance of the new book.

"*Pharmaceutical Recipe Book:* Up to June 30, 1935, a total of 5506 copies of the Pharmaceutical Recipe Book were printed and bound in buckram. Of this number 5345 copies were sold, 101 were distributed as complimentary copies and 60 copies remained as stock on hand. Since July 1st, the stock on hand has been sold and the chairman of the Committee on Publications recommended that an additional 125 copies be ordered printed and bound.

"The contract for printing and binding the new edition of the Recipe Book was awarded to the Mack Printing Company as you will recall. The contract for its distribution and sale will be awarded to the firm receiving the contract for the distribution and sale of the National Formulary."

Complete information on the status of revision of the Recipe Book cannot be given you at this time. Suffice it to report that satisfactory progress is being made in the revision, of the formulas and other parts of the text. In fact, Chairman Lascoff of the Committee on Recipe Book contends that, except for some work still to be done on a few formulas and the alteration of certain titles to make them conform to the recommendations of the Food and Drug Administration of the U. S. Department of Agriculture, the book is ready for the printer. That being the case, it is believed that publication will be proceeded with promptly.

The report was received on motion of Fischelis—Geo. D. Beal.

117. Contract for the Distribution and Sale of the N. F. VI and R. B. II. The secretary reported that Motion No. 38 (Council Letter No. 21, page 681) had received a majority vote and that President Fischelis had requested that final action be deferred until this meeting of the Council. After a full discussion, the action of the Council in awarding the contract to the Mack Printing Company, Easton, Pa., was affirmed on motion Beal—Arny.

118. Committee on Year Book. Chairman Geo. D. Beal submitted a verbal report approving the transfer of Pharmaceutical Abstracts to the JOURNAL.

The report was approved on motion Christensen—Kelly.

119. Editor of the Year Book. Editor DuMez read the following report:

"Volumes 21 and 22 of the YEAR BOOK covering the years 1932 and 1933, respectively, have been published since the meeting held in Washington in May of last year. This leaves one more book still to be prepared to complete the series up to the time when the publication of Pharmaceutical abstracts was begun in the JOURNAL. When this volume is published, the YEAR BOOK in its present form will be discontinued. The book in its present form contains some useful features, and I have no doubt that its passing will be missed by many. As a vehicle for carrying the report of the Reporter on the Progress of Pharmacy, however, it has outlived its usefulness by many years. The large majority of workers who use the material carried in the report of the Reporter on the Progress of Pharmacy want it immediately after the publication of the original article and they are not willing to wait a year or two for it, as they have been compelled to do where they have depended upon the YEAR BOOK.

"The preparation of this volume which will be the YEAR BOOK for 1934 is well under way. About two-thirds of the abstracting has already been done and I have the assurance of my collaborators that the remaining abstracts will be completed within the next 60 days. The book should, therefore, be ready for distribution sometime in the early part of next year, depending on the rapidity with which the printer handles the job.

"The publication of the report of the Reporter on the Progress of Pharmacy in monthly instalments in the JOURNAL was begun in March of this year and met with a favorable response immediately, if the letters of commendation I have received may be taken as a true criterion. We began with a staff of 30 abstractors and with the expectation of publishing 32 pages of printed matter each month. The staff has since been increased to 36 abstractors and the number of pages of printed material has been increased to 36. Up to and including the July issue of the JOURNAL, a total of 176 pages of Abstracts have been published. It is quite probable that it will be necessary to make another increase in the number of pages published very soon as we are still enlarging our field of the literature that is being covered. If we should undertake to cover thoroughly

some of the fields closely related to pharmacy, the field of cosmetics, for instance, the increase in the number of pages would be very much greater.

"While we are on this subject, it may be mentioned that an approach has been made to determine if our ASSOCIATION would be willing to undertake to abstract the literature on cosmetics. The cosmetic industry has grown enormously in the past two decades, and they are searching about for some organization to undertake to do this work for them. It may be that we should give this matter serious consideration at this time.

"In setting up a working arrangement for getting out these monthly Abstracts it was agreed that we would pay the abstractors at the rate of $2.00 per printed page of abstract made from articles published in English, and $3.00 per printed page for abstracts of articles published in a foreign language. We did not, however, agree on the time of making payments for the work done. This matter has been brought to my attention by several of our abstractors, it has been discussed with Secretary Kelly and it is recommended that hereafter payments be made quarterly.

"Your attention is also called to the fact that when the Council agreed to discontinue the YEAR BOOK in its present form, it also declared that the ASSOCIATION data, membership rolls and index would be carried in the JOURNAL so that those desiring to do so could bind this material together with the Abstracts and thus continue the series of YEAR BOOKS. This will require a total of approximately 70 pages exclusive of the index. It is recommended that the Editor of the JOURNAL be given authority to proceed with the publication of this material promptly so that the matter of authority will not be a factor in holding up publication at the end of the year."

On motion of Adams—Arny, the report was received and the recommendation that the literature on cosmetics be abstracted for publication in connection with the Pharmaceutical Abstracts was referred to the Committee on Cosmetics for investigation and recommendation.

The Incoming Committee on Publications was requested to submit a recommendation with respect to the publication of the ASSOCIATION material, including the roll of members, heretofore published in the YEAR BOOK, on motion of Fischelis—Christensen.

120. Editor of the Journal. Editor Eberle read the following report:

"The report of the Editor herewith deals with the business of 1934 and as report of previous years, is compared with the prior year, 1933.

"The expenses of the JOURNAL for 1933 were $13,212.94; the receipts were $7900.00. Deducting the receipts, not including membership subscriptions from expenses shows a net cost of $5312.94. Add the Editor's salary and we have a cost of $10,312.94. The credit on membership subscriptions, not Headquarters members, less 20% for overhead, which for 1933 is $4334.26 from the gross cost, $10,312.94, leaves $5978.68 net cost, including the Editor's salary.

"The total expenditures for the publication of the JOURNAL, for 1934, including the Editor's salary, were $19,236.50 ($14,236.50 + $5000.00). The total expenditures for 1933 were $18,212.94 ($13,212.94 + $5000.00), which represents an increase of expenditures for 1934 of $1023.56.

"The receipts of the JOURNAL for advertising, subscriptions, sales of single copies, reprints, etc., for 1934, were $9289.34. The subscription credit received for 1934 non-headquarters building members, less 20% for overhead, amounted to $4235.14, making a total of $13,524.48. The total receipts for 1933 were $12,234.26. The receipts for 1934 have, therefore, increased by $1290.22.

"The total expenditures for 1934 of $19,236.50, less the receipts of $13,524.48 show the net cost of the JOURNAL for 1934 to be $5712.02. The net cost for 1933 was $5978.68. The net cost of the JOURNAL has, therefore, decreased by $266.66 in 1934 over the preceding year (1933).

"The number of pages in 1933 was 1310; in 1934, 1256. The publication costs in 1933, $9107.44; in 1934, $9300.13. Mailing costs of the JOURNAL in 1933, $599.51; in 1934, $572.45; mailing back numbers of the JOURNAL for 1933, $26.50; in 1934, $31.20. Engravings and photographs, other than included in Mack Printing Company account in 1933, $387.06; in 1934, $552.39. Binding JOURNALS in 1933, $25.75; in 1934, $21.00; stationery and office supplies in 1933, $69.20; in 1934, $214.62; clerical, in 1933, $1242.00; in 1934, $1173.00. Commissions on advertising in 1933, $488.22; in 1934, $407.41. Small miscellaneous items make up the remainder of the total expenses.

"Detailed comparative receipts 1933 and 1934. The receipts for 1933, $7900.00; for 1934, $9289.34. Advertising in 1933 brought $5241.92; in 1934, $4942.29. Subscriptions in 1933 amounted to $903.53; in 1934, $1216.26; it should be understood that we make every effort possible to bring subscriptions to memberships. Single copes in 1933, $28.51; in 1934, $73.51. Re-

prints, in 1933, brought $1038.79; in 1934, $834.05; Professional Pharmacy, $1596.66; Miscellaneous items amounted to $687.25 in 1933; in 1934, $637.15. The American Association of Colleges of Pharmacy contributed $300.00 in 1933 and the same amount in 1934. The Conference of Pharmaceutical Association Secretaries contributed $25.00 in 1933 toward the expenses of printing their minutes in the JOURNAL and a like contribution was made in 1934. The Conference of Law Enforcement Officials contributed $75.00 in 1933 and $50.00 in 1934.

"A number of reproductions of pictures and books have been made without cost to the JOURNAL and ASSOCIATION, and the sum derived from the sales of these was contributed to the JOURNAL—'The Laboratory,' 'Dr. Power in His Laboratory,' 'Ground Breaking at Headquarters,' 'Proof Sheets of United States Pharmacopœia I,' 'New Nomenclature.'

"In recent years the papers presented to the Sections have increased in number and some in the pages of the reports, as a result we had quite a number of unpublished papers, most of which have now been published.

"As stated in the last report, among the papers in recent years have been those presented in partial fulfilment of work for degrees. As then stated, it has occurred to the Editor that part of the expenses for papers of that type should be met by the authors. There are two sides to the question, of course. Another expense that should, perhaps in part be met by authors is when a large number of cuts are used. Tabular matter should be summarized to an extent. The JOURNAL has carried the expense of having reprints made of reports and minutes of meetings in connection with the annual convention for distribution at the sessions of the ASSOCIATION and for pharmaceutical publications. Also, abstracts have been mimeographed for like distribution; more than one hundred have been prepared.

"A work of interest and value has been published, 'The Professional Pharmacy—An Analysis of Prescription Department Activities,' by Frank A. Delgado and Arthur Kimball. It is part of the National Drug Stores Survey and published under and by authority of the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce. Ten thousand copies of these have been published and sold and the amount received has paid for making them, and also for publication costs. Fine publicity has been given by most of the pharmaceutical publications. A revision of Professional Pharmacy is in process.

"The contribution of the American Association of Colleges of Pharmacy is appreciated and thanks are extended to Dean C. B. Jordan, editor of the Department, for his coöperation. Also to the Conference of Pharmaceutical Association Secretaries and Conference of Law Enforcement Officials.

"On account of the code the printing cost of the JOURNAL was increased by nearly 10%. The Editor advised the Publication Committee to this effect in the monthly report for June 1934, and again in the July report 1934, after investigation that it was necessary to comply with the code and further advising that under these rates the publication costs for the June issue were $905.12 against $976.51 somewhat less than 10%. The code costs have been kept up since then. Another item that changed the cost slightly up to June 1935—Mack Printing Company gave us the advantage of their old price on cover stock. The supply was exhausted with the June issue so that we are now paying $3.20 per month more for covers. There has been a slight increase in engravers' prices, however their prices were adopted before the code went into effect (in 1932).

"As stated we have been watching the corners so that the net costs as shown by the report were slightly less in 1934 than in the previous year; however, those of the first six months of 1935, due largely to the code are $295.98 greater than up to July 1, 1934.

"The Abstract Section cost of the JOURNAL has averaged about $230.00; however, this does not take into account the higher mailing cost, some of the engravers' plates of the Abstract Section and other minor items, which we did not think of sufficient importance to detail as after all it is ASSOCIATION cost. We are confident from corresponding that the Abstract Section has met with favor. We wish to thank Editor DuMez for the fine coöperation he and his co-workers have given us and also the Mack Printing Company.

"Extended detail would increase the length of this report. The report of the Editor is made monthly to the Publication Committee, annually a scheduled report is made of Receipts and Expenses, Itemized Reports are given to the secretary for the Auditor's Report and all bills are receipted before going to the secretary.

"The Editor is thankful for the fine coöperation given him."

On motion Adams—Arny, the report was received and discussion of it deferred until the afternoon session.

Later, the report was approved on motion Adams—Arny.

121. Committee on National Formulary. The following report was read by Chairman Gathercoal:

"*Progress of the Revision.*—The copy for the page proof has been largely completed and forwarded to the printer. The page proof, in 64-page forms, is being issued, and we trust will be distributed by the first of September. The page proof represents the completed copy of the Revision, with the exception of a few monographs in the Tablets, possibly one ointment monograph, the section on General Tests, Reagents, etc. (which is largely referred to the similar section in the U. S. P. XI), and the Index. It is expected that these unfinished portions will be ready by the first of September, or as soon as the U. S. P. page proof has advanced to the point where we can use it for reference purposes.

"We have published more than 500 pages in the N. F. Bulletin and the Sub-committee Letters during the past year. A very large amount of correspondence has been handled, and we have completed the reading of the corrected galley proof.

"The galley proof first began to appear in December 1934, and was completed in June 1935. The galley proof was distributed according to the Sub-committee assignments. For example, all of the galley of the crude drug monographs was distributed to Sub-committee No. 1 on Pharmacognosy, including the auxiliary members and all of those who had had any part in the preparation of the monographs. Likewise, the chemical monographs went to Sub-committee No. 2 and all who were particularly interested in the chemistry of the N. F. In this way, all of those who were interested in any particular phase of the work had opportunity to carefully scrutinize that portion of the galley proof in which they were best trained. Of course all of the *Committee members* received the entire galley proof.

"The returns from the galley proof were unusually good. We kept a record of that which was sent out and returned, and found that the returns were fully 90 per cent. Many of the returns had been very carefully read; many of them contained valuable criticisms and some of them many valuable criticisms. All-told about 7000 criticisms were returned on the galley proof. The chairman and his secretary carefully reviewed every one of these, and we were able to use about half of them. The result of these criticisms was a markedly improved text, even though we felt that the text was as perfect as we could make it before it went into galley.

"In view of the fact that such abundant opportunity has been given for criticism, not only as regards the accuracy of the statements, but also as regards opinions on policy and suggestions on improved methods, we are restricting criticism on the page proof purely to matters of accuracy, and intend to make no changes that are not called for except for absolute corrections of error.

"*Financial Statement for the Year.*—The summary of the financial statement for the year is attached.

NATIONAL FORMULARY COMMITTEE EXPENSES.

July 1, 1934—June 30, 1935.

Total, $2716.85.

Bulletin & Sub-committee Letters	$738.22	
Mimeographing		577.00
Bull. pp. 1693–2140 and Index	495.00	
Sub-committee No. 3	10.00	
Sub-committee No. 6	10.00	
Sub-committee No. 7	10.00	
Sub-committee No. 8	44.00	
Sub-committee on Tablets	8.00	
Paper, 50 M punched		85.47
Binders, 75 blue		63.75
Lettering binders		10.00
Laces		2.00

Chairman's Office		1415.75
Secretary Smith		810.00
Clerical help		7.05
Miss Otis, English reader		200.00
Postage		148.05
Letterheads and office supplies		32.40
Travel		194.55
Sundries		23.70
Telephone and telegraph	4.75	
Carfare	.25	
Express	3.15	
28 meals	15.55	
Chairman's Laboratory		347.05
Helpers		312.10
Supplies		34.95
Sub-committee Expenses		43.70
No. 2 Supplies		6.43
Ampuls, travel to conference		37.27
Exhibits		172.13
American Dental Association, St. Paul		52.77
(U. S. Pharmacopœia		50.00)
American Medical Assocation, Cleveland		101.00
Chicago Dental Society, Chicago		18.36
(Chicago Dental Society		40.00)
(University of Illinois College of Pharmacy		45.00)
Remitted to Secretary Kelly		$62.25
9 copies R Ingredient Survey		15.75
31 copies N. F. Bulletin, Vol. V		46.50

"The increase in the membership of the Committee to twenty is not requisite. Perhaps a decrease in membership to but ten would be more desirable, with the appointment of one new member each year; or allow the membership to remain at fifteen and appoint one new member one year and two members the next.

"The following items should be considered in connection with the election of this committee:

"1. Each committeeman should be chosen for ability to assume a definite assignment of the work or be a specialist in a particular phase of the work. Some consideration should be given to the geographical distribution according to type of institutions represented in the membership of the ASSOCIATION.

"2. Provision should be made to retire any member of the Committee who is not willing or able to give full and careful attention to his duties in connection with the Committee work.

"3. Provision should be made to hold a meeting of the Committee at least once each year, perhaps in connection with the annual meeting of the ASSOCIATION.

"4. No salary should be paid to the Committee members, but a policy of paying the necessary expenses of conducting the Committee work, including the expense of individual members for attendance at the annual meeting of the Committee, should be manifested. If it be possible to pay a suitable honorarium at the time of retirement, such a policy would be in order. An annual budget for the committee expenses should be prepared and presented to the Committee.

"The National Formulary is a great financial asset of the AMERICAN PHARMACEUTICAL ASSOCIATION. The financial value of this book can be materially increased provided due attention is given to its revision and to the development of its sale. The Council of the AMERICAN PHARMACEUTICAL ASOCIATION should originate and definitely approve of policies looking to the continued development of this book leading to its increased popularity and sale. These policies and

principles of revision should be given to the Committee for its guidance and with the definite understanding that they are to be followed.

"A few of the great questions of policy that the Council should now consider and definitely pass upon are as follows:

> "1. What is the purpose of the National Formulary? It was at first purely a retail pharmacist's formulary. An attempt was made to interest physicians in it, but there was nothing there to interest them and, even after fifty years, they have not become interested in it. It became a legal standard and this phase has been extensively developed. Now, however, it has lost much of its interest to the practicing pharmacist because of this legal development. How can it be made a complete legal standard (a necessity under the law) and, at the same time regain the interest of the pharmacist and acquire the interest of the physician? It is of great interest to the manufacturing pharmacist and as a textbook in the pharmacy colleges.
>
> "2. On what basis shall admissions be made to the National Formulary? Admissions never have been on a therapeutic basis, though perhaps nearer to it in this present revision than heretofore. The physician desires the National Formulary to assume such responsibility: shall we do so? Admissions in earlier editions were exclusively preparations with working formulas; then non-U. S. P. simples used in National Formulary formulas were admitted and standardized; now non-U. S. P. simples not used in National Formulary formulas are admitted and standardized. Are these correct policies? What shall be the new policies? Shall we admit formulas that provide substitutes for proprietory preparations? These are what the pharmacists want. Shall we admit the newest discoveries of simples and preparations? These are what the physician wants. Shall we admit new items annually and drop them if they fail to attain popularity with physicians? Shall we endeavor to develop new preparations and popularize them with physicians by advertising? Or must we always wait until the manufacturer has developed the preparation and popularized it before it can be 'officialized?'

"It would seem desirable that the AMERICAN PHARMACEUTICAL ASSOCIATION Council, a body elected by the ASSOCIATION and representative of all phases of the A. PH. A. membership, should assume responsibility for answering these questions and many others of a similar nature.

RECOMMENDATIONS.

"*I. Election of the Committee Members.*—A recommendation is made that the National Formulary Committee be increased to 20 members and that two members be elected each year to serve for 10-year terms. The Committee would then be a continuous body and there would be no abrupt change in policies and methods with the election of an entirely new committee, as occurs under the present system. This new policy as regards the election of Committee members, seems to be especially desirable in view of a gradual change in policy as regards the revision work. This change involves the issue of supplements and perhaps a new edition of the book itself more frequently than decennially.

"*II. Council Supervision of the N. F. Revision.*—The Council should maintain a somewhat closer supervision over the work of Revision and should take a greater responsibility for the revision. This perhaps can be done by reviewing annually and approving or re-approving the General Principles of Revision for the guidance of the Committee.

"*III. Continuance of the N. F. Revision Activities.*—It is recommended that the Council adopt a policy to the effect that the N. F. Committee continue an earnest and constructive study of the problems that have arisen in connection with the present revision, and that so far as possible, these studies be expressed in supplements to the N. F.

"It is suggested that each sub-committee (possibly reorganized) be urged to continue the study of definite problems. A few of these may be outlined as follows:

"Sub-committee No. 1 (Pharmacognosy):

"(1) A careful review and consideration of each new vegetable or animal drug that is presented in the current literature for its possibilities as an official item.

"(2) A study of the amount of foreign organic matter that is present commercially in each official crude drug.

"(3) A careful review of the work done by Dr. Newcomb on the inorganic matter in crude drugs, and a recheck of the inorganic matter in commercial crude drugs of to-day.

"(4) A careful checkup of the official description of the crude drug and its structure as well as the diagnostic features of the powder.

"(5) The evaluation of crude drugs by their volatile constituents, as determined by distillation."

"Sub-committee No. 2 (Chemicals):

"(1) Determine a permissible extent of moisture for each of the N. F. chemicals.

"(2) Determine the approximate solubilities of each of the N. F. chemicals in a wider range of solvents.

"(3) Study the N. F. organic chemicals for readily carbonizable substances.

"(4) Study the N. F. organic chemicals for residue after ignition.

"(5) Check all of the N. F. tests for identity and purity on commercial samples.

"(6) Review and carefully consider each chemical that is presented in the current literature for its possibilities as an official item; for example, Colloidal Kaolin."

"Sub-committee No. 3 (Solution Preparations):

"(1) The prevention of precipitation in elixirs.

"(2) The preparation of elixirs by percolation.

"(3) The possibility of preparing desirable liquid preparations of new chemicals that appear in the literature.

"(4) A careful study of fruit syrups.

"(5) A careful study of assays in connection with elixirs, solutions, syrups, etc.

"(6) A careful check on present descriptions, tests and assay processes.

"(7) A careful study of the new pepsin elixir monographs.

"(8) A study of Syrup of Glycyrrhizin."

"Sub-committee No. 4 (Extractive Preparations):

"(1) The application of Dr. Husa's results on the official extractive preparations.

"(2) Why have the extractive preparations lost their popularity with physicians?

"(3) Standardization of 'extractive' in these preparations.

"(4) Standardization of color, odor and taste in these preparations.

"(5) Tests of identity of these preparations."

"Sub-committee No. 5 (Preparations for Internal Use):

"(1) Are there other effervescent salts that should be made official?

"(2) Are there alkalinizing powders that should be made official?

"(3) Are there not many troches or candy tablets that might be considered for official standarization, such as phenolphthalein candy, etc.

"(4) Shall capsule preparations be made official?

"(5) Assays of effervescent and non-effervescent salts."

"Sub-committee No. 6 (External Preparations):

"(1) A study of dusting powders, douche powders and ointments from the antiseptic standpoint (Dr. Kelly's foot powder).

"(2) The use of antiseptic dyes in ointments and solutions.

"(3) Study the popularization of liquid and solid petroxolin as the basis of medication for external use.

"(4) Study ointments and ointment bases, especially in regard to the effect of varying temperatures and in regard to absorbability into the skin."

"Sub-committee No. 7 (Miscellaneous Preparations):

"(1) Investigation of radium preparations.

"(2) Investigation of sprays, inhalents and nose drops.

"(3) Study the vitamin assays of cod liver oil emulsions.
"(4) Study the colloidal character of phenolphthalein in liquid petrolatum emulsion."

"Sub-committee on Ampuls:

"(1) Study carefully tests for the identity and purity of ampul solutions.
"(2) Study the sterility of ampul solutions.
"(3) Study preservatives, buffers and hydrogen-ion concentration in ampul solutions."

"Sub-committee on Tablets:

"(1) Study tests for the identity and purity of tablets.
"(2) Study the general monograph for tablets, including coatings, diluents, colorings, adhesives, etc.
"(3) Study the solubilities of tablets, especially the test for the solubility of enteric-coated tablets.
"(4) Develop assays for popular tablets not now official."

"Sub-committee on Dental Products:

"(1) Which products that are used by dentists in their practice or that can be prescribed by dentists for use by the patient are suitable for official standardization?
"(2) What standards are necessary for such products?"

"Sub-committee on Veterinary Products:

"(1) Which products that are used by veterinarians in their practice or that can be prescribed by veterinarians are suitable for official standardization?
"(2) What standards are suitable for such products?"

"Special Sub-committee on Glandular Products:

"(1) A study of assays for these products.
"(2) A careful checkup of the histological features of these products.
"(3) A study of commercial products for adulterations.
"(4) A study of these products for sterility."

"General Studies:

"(1) The scientific naming of colors as used in the U. S. P. and N. F. in connection with crude drugs, chemicals, preparations, tests, etc.
"(2) A comparative study of chemical assays of the same general nature.
"(3) A careful study and checkup on all of the simples of the U. S. P. and the N. F. to determine the possibiiity of presenting these simples in suitable preparations for the physicians' use; for example, Solution and Ointment of Acriflavine (Dr. DuMez, 4-9-35).
"(4) A careful study and checkup on all of the titles and synonyms of the N. F., especially in view of the suggestions made by Dr. A. G. Murray.
"(5) A careful check of the alcohol content of all preparations containing alcohol."

"*IV. The National Formulary Bulletin.*—If the Council endorses the preceding recommendations, your chairman plans to carry on the National Formulary Bulletin. It is now approaching the completion of its fifth volume, that is, 2500 mimeographed pages. To provide for the issuance of this Bulletin and the correspondence in connection with the continuance of the N. F. Revision, it will be necessary for the chairman to be provided with a secretary. Miss Edith Smith, who has served as secretary for nearly two years, has been highly efficient and because of her constantly increasing knowledge of the details of this work, becomes increasingly more valuable. I would recommend that she be retained for the ensuing year at a salary of $1000.00 payable monthly."

"*V. N. F. Laboratory Work.*—If the studies outlined in Recommendation III are to be properly carried out, a laboratory should be established at once where much of the control work could be handled. We can establish such a laboratory at the College of Pharmacy without charge so far as rental, heat, light, etc., is concerned. It may be possible to obtain the services of a capa-

ble pharmaceutical chemist for part time, at a cost of not more than $100.00 per month. It would be necessary to provide the reagent supplies, as well as to provide commercial samples, etc. It is also possible that we may be able to obtain the services of two or three capable chemists through public works money. Also research work can be assigned to graduate students in various institutions. The laboratory space in mind is equipped so that four men can work together very comfortably. It is recommended that the Council provide for such a laboratory until facilities can be provided at the A. PH. A. building in Washington."

"*VI. N. F. Publicity.*—The popularization of the National Formulary to pharmacists and physicians is very important. This should be directly in charge of an A. PH. A. publicity director. A reasonable percentage of the gross receipts from the sale of the A. PH. A. publications should be set aside for this purpose. The publicity should take the form of exhibits at Conventions, of 'U. S. P. and N. F. propaganda,' of JOURNAL articles, of addresses at meetings of physicians and of pharmacists, and in various other ways that will develop."

"*VII. Honoraria to Committeemen.*—While it is a well-recognized maxim that voluntary service, such as has been given in connection with the U. S. P. and the N. F. revision work, can never be paid for in dollars and cents, yet it is also true that a monetary token of appreciation is always acceptable and so far as I know is never declined. Such tokens will be especially effective in stimulating renewed interest in N. F. revision, if these preceding recommendations be adopted. It is therefore recommended that honoraria be paid to the members of the National Formulary Revision Committee, based to an extent at least, on the amount of work that they have been called upon to do or to supervise, and, to an extent, on the faithfulness with which this work has been done."

The report was received and consideration of the recommendations deferred to the afternoon session on motion Arny—Geo. D. Beal. See Item No. 126.

The meeting then adjourned until 2:30 P.M.

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The afternoon meeting was called to order at 2:40 P.M. with the same attendance as in the morning session.

122. Committee on Recipe Book. In the absence of Chairman Lascoff who sent a message of regret that he could not be present, the following report was read by the secretary:

"Your chairman begs to submit the following report on the Recipe Book for the year 1934–1935.

"The success of the second edition of the Recipe Book seems well assured, because of the frequent calls for Recipe Book No. 1. When the original printing of 5000 copies had been exhausted, in March 1934, the second series, Series B, consisting of 500 copies, was printed. Early in July, the publishers reported that they were entirely out of stock, and that they had called in all stock from depositories, which had also been used. We are receiving inquiries daily as to when the new Recipe Book will be completed. We expect that it will be ready by January 1, 1936, if not sooner. In the meantime, your chairman has deemed it advisable to have another series, Series C, printed, consisting of 125 copies, in order to care for the present demand. We are also accepting advance orders for the second edition.

"Great strides in the progress of the second edition have been made since the work of revision was begun in 1932–1933. The first two years were concentrated on the collecting of new formulas. This past year, the suggestions and efforts of the Committee and your Chairman, with the assistance of Mrs. Kassner, have been centered on correcting the typographical errors in the first edition; deleting superfluous, conflicting or duplicated material; experimenting with the new formulas that were submitted to be sure that they were workable; transposing proprietary names to their chemical equivalents.

"It is no exaggeration to state that to-day the pharmacist purchases at least 75% of his U. S. P. and N. F. galenicals from manufacturers. The former cannot purchase from the manufacturer, however, the galenicals of deleted formulas from old editions. These must be prepared by the pharmacist. For this purpose, the Recipe Book supplies the formula he needs.

"*Deletions.*—In the new Recipe Book, we shall drop any preparations which will be included in the N. F. VI. Your chairman is checking very carefully to be sure that there is no duplication. The most valuable formulas deleted from old U. S. P.'s and N. F.'s will remain. In

this way, one book of reference in the prescription pharmacy takes the place of several old editions.

"*Hospital Formulas.*—Physicians frequently keep in their minds formulas used in their own particular hospitals and prescribe such formulas. In Recipe Book No. 1, the Pharmaceutical Formulas are in Part I and the Hospital Formulas are in Part II. In the new Recipe Book, we have included the Pharmaceutical and Hospital Formulas in one part. All of the formulas are arranged in alphabetical order under English titles. Preparations of one kind are grouped together. The Hospital Formulas are designated as such.

"*Bulletins.*—After my last report of 1933–1934, additional bulletins were mailed. Up to the present writing, thirty-four bulletins have been mailed. These new bulletins, proposed in total 352 new formulas, in addition to 21 new veterinary formulas. The 352 new formulas consist of

Pharmaceutical Formulas (including Hospital)	Diagnostic Reagent Formulas
Cosmetic Formulas	Dental Formulas
Flavoring Extracts (Vehicles)	Photographic Formulas
Technical Formulas	Veterinary Formulas

"In addition to the foregoing, we also had bulletins on 'Treatments and Antidotes,' 'Table of Solubilities,' 'Latin Abbreviations' and 'Doses.' A new section was written on Sterilization, in accordance with the latest data obtainable.

"The following is a condensed report of the bulletins that were mailed since the last meeting:

"Early in November 1934, the following bulletins were mailed:

Bulletin No. 20—Treatments and Antidotes for Poisoning.
Bulletin No. 21—Table of Solubilities.
Bulletin No. 22—Four Questions Pertaining to the Two Previous Bulletins.

"The mailing of all Bulletins, brings forth a great many suggestions from the members. However, it would take too much time and space to enumerate all the various comments. We will, therefore, endeavor to present a summary of the results in each case.

"Some members felt that 'Emergency Treatment' or 'First Aid Treatment of Cases of Poisoning' would be a better title for Bulletin No. 20. Some suggestions were made on additional poisons and their treatment, such as mineral acids, carbolic acid, cresol, lysol, illuminating gas, etc. The 'Treatment and Antidotes for Poisoning' will appear in Recipe Book No. 2.

"Eleven members favored accepting 'Table of Solubilities,' while E. N. Gathercoal, among others, felt that the Table should be reasonably 'complete' before inclusion. This Table will not appear in the new Edition of the Book. 'Latin Abbreviations' will not be included in the new Book.

"Bulletin No. 23, also sent out in November 1934, consisted of 128 N. F. V Deletions (*b*). The Committee members favored the inclusion of only a few of the deleted N. F. Formulas. L. D. Havenhill felt that the Recipe Book should not include remedies which have gradually passed out of use, unless the preparations are used regularly and there is a demand for them.

"Bulletin No. 24 was sent out at the same time. In this bulletin were three formulas suggested by L. D. Havenhill which were accepted by the members.

"Bulletin No. 25 consisted of 13 new formulas, suggested by W. L. Scoville. With one or two objections, the Committee voted to include all these new formulas.

"Bulletin No. 26 presented one new formula and also inquired as to the advisability of including all the formulas for Whitfield's Ointment. We have since been advised that this formula will appear in N. F. VI.

"Bulletin No. 27 consisted of 5 new formulas suggested by S. L. Hilton. All were accepted with the exception of Ephedrine Solution of Water and Compound Solution of Ephedrine (in oil), which will appear in N. F. VI.

"Bulletin No. 28—Three new pharmaceutical formulas. All were unanimously accepted.

"Bulletin No. 29—This bulletin included a list of 'Average Doses of Unofficial Drugs,' which was unanimously accepted.

"Bulletin No. 30—This bulletin consisted of the 'Report of the Conference of Part of Recipe Book Revision Committee, held February 25, 1935.'" Your chairman feels that it is proper to include this report herewith:

REPORT OF CONFERENCE OF PART OF RECIPE BOOK REVISION COMMITTEE HELD FEBRUARY 25, 1935.

Present: J. L. Lascoff, *Chairman;* H. V. Arny, E. F. Cook, R. P. Fischelis, E. N. Gathercoal, E. F. Kelly, C. P. Wimmer and Mrs. E. W. Kassner.

The following recommendations were made:

1. All pharmaceutical and hospital formulas should be arranged in one section, entitled "Pharmaceutical Formulas, including Hospital Formulas," with a statement to the effect that formulas in Part II of R. B. No. 1 are contained therein.

All formulas should be arranged in alphabetical order under English titles. All preparations of one kind being grouped together and hospital formulas being designated as such.

2. (1) Formulas having titles the same as, or very similar to some N. F. VI preparations.

Of these, 31 should be deleted as being too similar to N. F. formulas. 12 should remain in the Recipe Book under new names, giving the former name as a synonym and 11 should remain as their titles were not sufficiently like those of N. F. VI to cause any trouble.

(2) Formulas having so-called "therapeutic" titles, referring to some disease or condition or titles attributing certain properties to the preparation.

A list of all these should be sent to E. F. Kelly who would ascertain whether or not such titles would be considered objectionable. If it became necessary, titles should be changed.

(3) Insecticides: E. F. Kelly should be asked to take up this manner with the proper authorities in order to ascertain the requirements of Federal and State laws.

3. General monographs at heads of sections, *e. g.*, Ampuls, Emulsions, etc.

In case of Ampuls, some general principles (quoted from N. F. VI) should be laid down and page references should be made to N. F. VI for details regarding sterilization, etc. That in the case of Emulsions and Elixirs information should be given, but in the case of Tablets be deleted. E. F. Cook undertook to supply the text from U. S. P. XI regarding Emulsions.

4. Type Process for Tinctures, etc.: These should be quoted in full at the beginning of the section.

5. Sterilization: That in the case of ampuls, etc., page reference should be made to N. F. VI. For Gray Oil, page 82, the words "prepare aseptically" should be inserted.

6. Doses Missing: That a list of these should be sent to E. N. Gathercoal who would get them filled in.

7. Galenicals listed as ingredients in R. B. Formulas, but now deleted from U. S. P. and N. F.: That these should be included in the Recipe Book and when occurring as ingredients should be designated "R. B."

8. That all drugs, chemicals and preparations named in formulas, if official under these names in the U. S. P. or N. F., are intended to be according to U. S. P. or N. F. specifications. This covers cases of certain substances being either crystallin or anhydrous, strengths of certain solutions, etc.

9. Trade-marked names: That preparations containing ingredients having trade-marked names should be deleted. E. F. Kelly was asked to ascertain whether or not certain substances were trade-marked. That in the case of Photographic Formulas, formulas containing such ingredients should be left as they are.

10. (1) Surgical Dressings: That this section should be deleted.

(2) Dental Formulas: That these should await action from the American Dental Association.

(3) Laboratory Reagents: That this section, with 15 new formulas and with all formulas appearing in N. F. VI deleted, was all right.

(4) Veterinary Formulas: E. N. Gathercoal undertook to send these to an authority for revision.

(5) Photographic Formulas: That L. A. Becker should be asked to revise this section.

(6) Cosmetic Formulas: C. P. Wimmer undertook to revise this section. E. F. Kelly undertook to ascertain, after the former's revision, whether any ingredients could be considered objectionable.

(7) Flavoring Agents: That the latest circular on standards be obtained and the section revised from this.

(8) Technical and Miscellaneous Formulas: That no special revision of these was needed.

It was suggested that Dr. Fantus and Dr. Eggleston be approached with a view to obtaining information from them for a new section on *Vehicles*.

11. (1) New Formulas: That these should be included if voted for by a majority the second time.

(2) Whitfield's Ointments: That the present formula should be omitted and that the formula 25 (6), should be included under the title of "Modified Whitfield's Ointment" or "Whitfield's Ointment with Thymol."

(3) Poisons Table: That this should be accepted for inclusion after being referred to a toxicologist. Dr. Fischelis undertook to hand the material over to some suitable individual.

(4) N. F. Deletions: That bearing in mind the 3 previous votes of the committee and the vote of the retail pharmacists, Chairman Lascoff should compile a list of 30 of these for inclusion in R. B. No. 2 and that they should be submitted to the committee as a bulletin.

12. Table of Doses: That trade-marked items should remain on this list. That the doses should be carefully checked (1) from Gutman's book (2) by E. F. Kelly setting some one to write to manufacturers asking them to check up on their own items. That the avenue of entrance into the body should be stated.

13. Table of Solubilities. That this should not be included.

Additional Formulas for Inclusion by Chairman Lascoff: That formulas for—

White Lotion Magma	(experimented) OK
White Lotion Ointment	(experimented) OK
Whitfield's Solution	(experimented) OK

Mercuric Salicylate, Sterile Suspension of Nose Drops, of the ordinary and emulsion type should be included in the new edition.

Preparations for the Hair: That all formulas containing mercury, arsenic or lead salts as ingredients should be deleted.

"All the recommendations made in the foregoing report have been taken care of.

"Bulletin No. 31, mailed May 1935 contained 57 miscellaneous pharmaceutical formulas. These were generally accepted.

"Bulletin No. 32, mailed June 1935, contained new cosmetic and photographic formulas. It also had comments from the Council on Dental Therapeutics of the American Dental Association.

"Bulletin No. 33 contained corrected formulas, vehicles, such as flavoring and coloring agents.

"Bulletin No. 34 contained four formulas for Ampuls. All of the bulletins were generally accepted by the members.

"In order to clear up some of the questionable formulas of previous bulletins, and to clarify the voting possibilities, the series of 'F' Bulletins was issued for a final vote. There were 12 of such bulletins. Each of the first three contained sixteen miscellaneous formulas.

"Bulletin 4F—List of 'Treatments and Antidotes.'

"Bulletin 5F—Diagnostic Reagents.

"Bulletin 6F—N. F. V deletions.

"Bulletin 7F—Dental Formulas.

"Bulletin 8F—Dental formulas.

"Bulletin 9F—Pharmaceutical Formulas (eight) and a question.

"Bulletin 10F—Pharmaceutical Formulas.

"Bulletin 11F—13 Hospital formulas.

"Bulletin 12F—List of U. S. P. deletions not included in the N. F. VI and admitted to the Recipe Book No. 2, and a list of 30 formulas chosen from the 290 formulas deleted from N. F. VI.

"Several members suggested the inclusion of the entire list of these deletions; others suggested discarding the entire list. It was finally decided to accept 30 of these formulas, and they will be included.

"The following is a condensed report on the 'F' Bulletins:

"On November 30, 1934, Bulletin 1F was mailed, consisting of 16 formulas selected from

previous Bulletins No. 1 and No. 2, on which there had been some hesitancy about including. The final voting showed a majority favoring inclusion of all the formulas submitted, with the exception of the 'Palatable Castor Oil' formula in Bulletin No. 2.

"On December 15, 1934, Bulletins 2F and 3F (16 formulas each) were mailed. These were continuations of Bulletin 1F with final votes desired for additional doubtful formulas. They were generally accepted, with a few suggestions on directions and title changes.

"On January 10, 1935, Bulletin 4F, consisting of Poisons and Antidotes, and Bulletin 5F, Laboratory Reagents, were mailed. The majority of the members favored the inclusion of Bulletin 4F. Bulletin 5F was favorably voted upon. E. F. Cook made the suggestions that E. N. Gathercoal be consulted on this Bulletin as he felt that the N. F. VI would include a great many of these reagents.

"Bulletin 6F consisted of the list of N. F. Deletions.

"On January 18, 1935, Bulletins 7F, 8F and 9F were mailed. The first two, containing the Dental Formulas, were generally accepted, with some changes in directions. Bulletin 9F again presented the problem of Whitfield's Ointment, which it was later learned, would be included in N. F. VI. This bulletin also contained the 'Seborrheal Dermatitis' formula, and the title 'Compound Naphthalan Ointment' was suggested. However, inasmuch as Naphthalan is a proprietary name, it was deemed advisable not to include this formula.

"On February 7, 1935, Bulletin 10F consisting of 12 miscellaneous pharmaceutical formulas, and Bulletin 11F, consisting of 13 Hospital and Cosmetic Formulas, were mailed. Bulletin 10F included a preference in the two formulas of Surgeon's Lubricating Jelly and the Stain for Acid-Proofing Laboratory Desks. This Bulletin received a majority of votes for the newer formula (Bulletin 27–2) and a majority vote for the old formula of the Stain as it now appears in Recipe Book No. 1. In Bulletin 11F, most of the committee preferred the Ephedrine Menthol Spray with the liquid Petrolatum, although Dr. Hilton expects to see a similar formula in N. F. VI. Messrs. Thum, Glover, Havenhill and Gray suggest mixing the cottonseed oil with the petrolatum. The other formulas were accepted.

"On February 14, 1935, Bulletin 6F was mailed, asking the members which of the N. F. Deletions they voted to include in Recipe Book No. 2. This bulletin was the result of a letter listing the N. F. Deletions, which was mailed to prominent pharmacists in various important cities of the United States. They were asked to check their lists for the items for which there was a demand in their prescription department. Bulletin 6F showed on a separate list the result of these letters. Although a few of the members wished to include all of the N. F. V deletions, in order to have a positive source of information, a number of the members voted for the inclusion of only a few of the formulas. C. P. Wimmer remarked that the vote of the retail pharmacist should be taken as conclusive as to what is useful in the list of deletions. Later, the members approved the action taken at the February meeting, with reference to the list of U. S. P. and N. F. deletions to be included in Recipe Book No. 2.

"In March 1935, Bulletin 12F was mailed, consisting of a list of the U. S. P. deletions not included in the N. F. VI and admitted to the Recipe Book No. 2, and a list of 30 formulas chosen from the 290 formulas deleted from N. F. VI, which were finally accepted.

"Out of the 248 original formulas submitted in the years 1932–33–34–35, it was voted to adopt 142 formulas for inclusion in Recipe Book No. 2. The others were not adopted either because they already were in Recipe Book No. 1 or they would appear in N. F. VI.

"*Revision.*—In conclusion, may your chairman state that the following has been accomplished in the matter of Revision:

"1. Pharmaceutical and Hospital Formulas combined into one Part of the Book.

"2. Revised list of First Aid Kits—reference—Johnson and Johnson; Bauer and Black.

"3. Photographic Section—new formulas submitted by Mr. Becker.

"4. Methods of Sterilization—as submitted by John C. Krantz, Jr. (assisted by Dr. Perry). This seems to have enough of an authoritative source.

"5. Sections on Vehicles—These were suggested by your chairman to Dr. Eggleston who published them in his 'Essentials of Prescription Writing.' We are using this information through the courtesy of W. B. Saunders & Co., publishers.

"6. Treatments and Antidotes for Poisons—revised and taken care of by R. P. Fischelis.

"7. Titles—the revision of objectionable titles with the able assistance of Dr. Dunbar, of the Food and Drug Administration.

"8. Dental Formulas—withcor rections and suggestions of the American Dental Association.

"9. Veterinary Formulas—with the aid of Dr. Bergman, chairman of the American Veterinary Medical Association.

"10. N. F. Deletions—of which 30 were finally selected."

In addition to the above, all parts of the Book have been carefully revised and corrected where necessary.

It is with deep regret that I mention here the death of Dr. F. B. Kilmer. He was one of our very earnest workers, faithfully replying to every bulletin mailed to him. He submitted many new formulas, and offered many valuable comments and suggestions, not only for Recipe Book No. 1, but also for Recipe Book No. 2. The Committee has sustained a great loss by his death.

Your chairman wishes to take this opportunity to express his personal thanks and appreciation for the untiring and responsive efforts of those members of his Committee who have served well.

There were several criticisms received from one or two members of the Committee who claimed that the Recipe Book should contain pharmaceutical formulas only and nothing else. It was our intention to have this book be one of ready reference for the pharmacist. Your chairman receives innumerable requests for formulas of all kinds, and the Recipe Book has been an invaluable aid to him in complying with these requests.

Mrs. Kassner and Dr. Gathercoal were very helpful to the Committee and I wish to thank them sincerely for their coöperation.

E. F. Kelly and E. G. Eberle have been very kind in offering their services, sending out the bulletins direct from their office, after Mrs. Kassner left for Europe. My heartfelt appreciation goes to them.

It is the personal opinion of your chairman that when this Book is completed, it will be one of the best reference books on Pharmaceutical formulas, which we have to-day.

On motion of Arny—Christensen, the report was received and the chairman was requested to supply galley proofs of R. B. II to the members of the Council. See Item No. 126.

123. Publications. President Fischelis suggested the advisability of carefully considering the entire list of publications of the ASSOCIATION and referred to the relation of the Reference Library and Historical Museum of the American Institute of Pharmacy to these publications, which is closer in the case of the Library.

It is important to decide what services the Library is to offer. It should be a source, through a condensed index, of information as to where literature is available rather than an attempt to duplicate all of such literature. Among many other possible services, the Library might furnish collections of books and pamphlets for the use of research and other workers.

President Fischelis expressed the belief that some one should supervise the publications—a Director of Publicity—and that the editorial and business management should be separate.

It is possible to make the present JOURNAL serviceable to pharmacists generally without interfering with its value as a scientific publication. Reference was made to the publications of other associations and to the need on our part for a popular type publication to be issued more generally than the JOURNAL.

President Fischelis recommended that a decision as to the policy to be followed, be reached promptly.

A general discussion followed, the result of which was an agreement of opinion that the JOURNAL should be continued with such changes as may be found advisable and that steps should be taken promptly to establish a popular publication which will be furnished to pharmacists as widely as possible.

The secretary submitted information as to the cost of such a publication and suggestions as to its title and form.

It was understood that the president would discuss this question in his address in order that it might be brought directly to the attention of the ASSOCIATION and to the consideration of the House of Delegates.

The meeting then adjourned until 8:00 P.M.

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The evening meeting was called to order at 8:20 P.M. with the same attendance as in the afternoon session.

124. The A. Ph. A.—N. A. R. D. Joint Committee. President Fischelis and Secretary Kelly reported verbally for the A. PH. A. representatives of which Dr. R. L. Swain is the third member.

Reference was made to the report submitted to the meeting of the Executive Committee of the Council on January 4, 1935.

Since that meeting, only one meeting of the Joint Committee had been held, in Washington, D. C., on March 12, 1935 at which three delegates from the Conference of Pharmaceutical Association Secretaries had been invited to confer with the Joint Committee. Unfortunately, President McCullough and Secretary Harring of the Conference were unable to attend. Secretary Wilson of Georgia, the third delegate, and Secretary Hayman of West Virginia represented the Conference.

At this meeting, the question of a joint membership fee was given further consideration and also the possibility of a popular publication to be issued jointly by the AMERICAN PHARMACEUTICAL ASSOCIATION and National Association of Retail Druggists to the members of the state associations. No action was taken on either question.

The attention of the Council was called to the agreements reached by the Joint Committee with respect to Pharmacy Week, U. S. P. and N. F. Publicity, and First Aid Week as previously reported.

The report was accepted and the Committee continued on motion of Arny—Adams.

125. Committee on Standard Program. Chairman Hilton submitted a verbal report on the changes made in the program for this meeting.

126. Report of Committee on National Formulary. It was moved by Geo. D. Beal, seconded by J. H. Beal and carried, that the recommendations in the report be segregated and considered seriatim.

After a general discussion and on motion of Geo. D. Beal—Arny, the appointment of a special Committee on N. F. and R. B. Policies was authorized to consist of three members of the Council and, as ex-officio members, the chairmen, respectively, of the Committee on N. F., of the Committee on R. B. and of the Committee of Revision of the U. S. P., to consider Recommendation No. 1 and to report to the Council at the next annual meeting.

On motion of Arny—Adams, Recommendation No. 2 was referred to the Committee on N. F. and R. B. Policies for consideration and recommendation.

With respect to Recommendation No. 3, the Council approved the issuance of supplements to the N. F. VI, as required, each supplement to be approved by the Council before issuance, on motion DuMez—Geo. D. Beal.

With respect to Recommendations Nos. 4 and 5, it was decided to continue the salary of the secretary until January 1, 1936, and that the Committee on Finance be requested to prepare a budget for N. F. revision including the services of a secretary to the chairman and of research workers, on motion Geo. D. Beal—Fischelis.

On motion Fischelis—Arny, Recommendation No. 6 was referred to the Committee on N. F.; and R. B. Policies and on motion of Adams—Geo. D. Beal, Recommendation No. 7 was referred to the Committee on Finance for consideration and recommendation.

127. Commission on Proprietary Medicines. The following report was read by Chairman Beal:

When the Commission on Proprietary Medicines was created, the specific task assigned to it was the preparation of a statement of the general principles to which package medicines advertised directly to the public should be expected to conform.

After a period of study such a statement of general principles was agreed upon and submitted to the Council in 1915, and upon approval by the Council, was published in the JOURNAL OF THE ASSOCIATION.

With the rendering of this report the specific purpose for which the Commission was created was completed, but the Commission has been continued from year to year without any clearly defined purpose or duties.

Some years ago the Commission submitted to the Council the question whether it should undertake the study of the package remedies of the market, with the view of determining the extent to which they severally did or did not comply with the above code of general principles.

After some discussion, the Council did not see fit to authorize such a study for the following reasons:

That such an investigation would involve an expensive set-up and a continuous expenditure which the Council at that time was not prepared to authorize.

It was felt that although the ASSOCIATION recognized that there is a place in pharmacy for package medicines when honestly exploited, it could not consistently with its past traditions authorize the publication of an approved list of such medicines, since such an approval would undoubtedly be used for advertising purposes.

That the publication of a list of preparations of which it disapproved would very likely involve the ASSOCIATION in expensive and annoying litigation.

Proposed New Federal Food and Drugs Act.—For nearly two years past there has been pending in the United States Congress the Copeland Bill, re-writing and extending the existing Federal Food and Drug Laws, and making important changes in the status of foods and drugs in interstate commerce.

Numerous hearings on the Bill have been held before the senate Committee on Interstate Commerce, and the first crudely drawn measure has been extensively modified, most of the modifications having been made by the friends and authors of the bill. As modified the Bill has received the approval of the Senate and is now being considered in the House of Representatives. Present indications are that either with or without further modification in minor particulars, the measure will become a law within the near future.

The existing Federal Act, known as the Food and Drugs Act of June 30, 1906, was principally a labeling law, applying mainly to the labels on foods and drugs, and by inference, to the literature accompanying the packages of such articles. In general the Federal Act has been efficiently administered, and to such an extent that grossly or wilfully misbranded foods and drugs have been largely driven from the markets. But while fairly efficient in controlling false statements accompanying packages of drugs, the law did not reach other forms of advertising, in consequence of which lack of control the advertising in newspapers and through radio announcements of certain package remedies have far exceeded the limits of decency and truthfulness. The existing federal law is also lacking in that it does not apply to cosmetic preparations, which have become such a large factor in modern drug merchandising.

The new law when it reaches the statute books, will not only apply to cosmetic preparations as well as to foods and drugs, but will also bring within its scope public advertisements of every kind, including radio announcements, which are made for the purpose of advancing the sale of such articles.

While perhaps no law is ever completely effective in restraining the evils at which it is aimed, the provisions of the pending Copeland Bill justify the belief that it will eliminate at least the major abuses which have hitherto so frequently prevailed in the advertising of certain classes of package remedies.

Scientific Section of Proprietary Association.—Recent drug trade publications have contained announcements of a reorganization of the Scientific Section of the Proprietary Association, and the Minutes of the 53rd Annual Meeting of that Association presents a verbatim report of the proceedings of the reorganized Section.

From these Proceedings it appears that among the activities proposed for the Section is the careful study of the medicinal agents found in package medicines, and the elimination of those which may give rise to injurious results, especially when used otherwise than under direct control of an attending physician. Among the agents condemned in the report and which it is stated should never be used as ingredients in package remedies are dinitro phenol and cincophen, a decision with which many of the members of the A. PH. A. will agree.

Another proposed objective is the investigation of attacks upon package remedies, and when such attacks are found to be justified by the facts, to provide for the correction of such faults, or when such attacks are found to be unjust, to prepare and publish the material for their repudiation.

If these projects are consistently carried out, the results cannot fail to advance the welfare of the legitimate package medicine industry.

The report was received on motion of Adams—Arny.

Dr. Beal personally recommended that the Commission, on which he did not expect to

continue to serve, be reorganized, that the members be elected at one time to serve for a fixed period, and that the Commission be given definite instructions as to its work. After discussion, it was decided to consider the recommendation at a later meeting of the Council.

128. Reduction in the Nominees for the Presidency. Consideration was given to the recommendation of Former-President Swain in his address at the 1934 meeting that the number of nominees be reduced from three to two. The recommendation was continued for further study on motion of Beal—Arny.

129. Honorarium to the Editor of R. B. I. The secretary reported that Motion No. 29 as submitted in Council Letter No. 15, page 51 and as referred to in Council Letter No. 16, page 57, had failed as lacking a majority.

130. A. Ph. A. Monographs. Chairman DuMez of the Committee on Publications reported on the possibilities of publishing the Monograph on Aconite recently completed. The Committee was requested to further investigate the publication and distribution of the monograph and to report to the Council, on motion of Arny—Geo. D. Beal.

131. Certificates of Appreciation to the Members of the Committee on Pharmacy Exhibit at the Century of Progress and to Miss Esther Barney and Mr. Thaddeus Niemec. The secretary reported on the arrangements for the preparation and presentation of these certificates and the action of the secretary was approved on motion Arny—Geo. D. Beal.

132. Nomination of Honorary President, Secretary and Treasurer of the Association. Dr. D. M. R. Culbreth was nominated to the House of Delegates for election as Honorary President for 1935–1936 on motion of Arny—Kelly; E. F. Kelly, as Secretary on motion Fischelis—Eberle; and C. W. Holton as Treasurer on motion of Arny—Geo. D. Beal.

133. Election of Honorary Member. Upon the recommendation of Dr. Edward Kremers, Dr. C. A. Rojahn of Germany, was elected an Honorary Member of the ASSOCIATION on motion of DuMez—Arny.

134. Election to Membership. On motion of Kelly—Arny, the following applicants were elected members:

No. 265, Frank Nicholas Bono, 725 Columbia, Houston, Texas; No. 266, Will T. Bradley, 179 Longwood Ave., Boston, Mass.; No. 267, Louis Milner. 4400 Chestnut St., Philadelphia, Penna.; No. 268, Columbus Claud Harris, 1019 McGowen Ave., Houston, Texas; No. 269, Elmer Baxter Williams, 1101 Main St., Boise, Idaho; No. 270, Edward H. Divine, 301 No. Central Park Ave., Chicago, Ill.; No. 271, Peter Henry Brady, 825 Sprague Ave., Spokane, Wash.; No. 272, Timothy Sylvester Shea, 390 Main St., Worcester, Mass.; No. 273, R. C. Shultz, Worland, Wyoming.

135. Annual Report of the Council to the House of Delegates. The president, the chairman of the Council and the secretary were authorized to prepare the report for presentation to the House of Delegates on motion of Arny—Eberle.

The meeting then adjourned.

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The Third Meeting of the Council was held in the Hotel Multnomah on Thursday, August 8, 1935, with the following members present: Hilton, Fischelis, Arny, Christensen, Adams, J. H. Beal, Geo. D. Beal, Eberle, DuMez and Kelly. President-Elect Costello also attended.

The minutes of the Second Meeting were read and approved on motion Adams—Arny, with the correction of the suggested name "Popular Journal" to "Proposed Publication."

136. Committee on Research. Chairman Arny read the following report:

Your committee transacted its business during the year by means of four bulletins. On Monday morning, August 5th, the sub-committee on research projects, held a meeting with four of its five members present. On Wednesday afternoon, August 7th, a meeting of the entire committee was called at which time the recommendations of the sub-committee were adopted by unanimous vote.

The three-year project on drug extraction conducted 1932–1935 by Dr. Husa and his associates of the University of Florida speaks for itself. At this (Portland) meeting Dr. Husa is presenting to the Scientific Section, four papers on the subject. Nine papers in all have been submitted since 1932 on this important problem.

The great success of the Husa project convinced your committee that a similar comprehen-

sive piece of research should be planned for the coming few years. Our discussion of this topic led to the following committee recommendations:

(1) That the research begun in October 1935 should be on the subject of tests and assays of (*a*) N. F. ampul solutions; (*b*) N. F. tablets.

(2) That the grant be for a period of one year, with the likelihood of renewal for a second or even a third year.

(3) That the present sub-committee of five (on research projects) be continued and that it be estimated with details of supervision of the proposed project.

(4) That an auxiliary committee of three scientists in manufacturing concerns be formed to furnish technical advice as required.

(5) Your committee feels that the proposed $1000.00 grant is scarcely adequate to cover the type of work desired. We therefore request the Council to authorize a grant of $1500.00 from the A. PH. A. Research Fund.

(6) Your committee has not as yet decided upon the person (and laboratory) where the proposed work will be performed. We request the Council to permit the Research Committee (or its sub-committee on research projects) to continue the negotiations as to the recipient of the grant; our committee to make the nomination, subject to confirmation by the Council.

The report was received and the recommendations approved on motion of Beal—Arny subject to the approval of the Committee on Finance with respect to the appropriation and with the understanding that the research project will be conducted under the immediate supervision of Chairman Gathercoal.

137. American Council on Pharmaceutical Education. The secretary read the following report from the representatives of the A. PH. A. of which H. A. B. Dunning and D. F. Jones are the other members:

The American Council on Pharmaceutical Education takes pleasure in reporting to you that progress has been made, even though it cannot present, at this time, tangible evidence of this accomplishment. The success of any undertaking of the kind entrusted to the Council depends to a very considerable extent on the degree to which troublesome obstacles have been removed, and the care which has been taken in laying the foundation for the beginning of organized work. Our case is no exception to the rule.

At the meeting held in Washington, D. C., on May 7, 1934, the Council decided that it would proceed immediately with the studies which it will be necessary to make. The Council was moved to make the above decision primarily for the reason that it was evident that many of the members of the associations represented were becoming impatient with what they believed to be unnecessary delay in starting the work of making standards. However, after your chairman and secretary had consulted with our advisor from the American Council on Education and a sizeable number of individuals of the three organizations represented on the Council, it was decided to wait just a little longer in order to give time for the removal of certain obstacles which it was believed would, if allowed to stand, work out to our disadvantage in the end. As a result of developments over the past few months, these obstacles no longer stand in our way and the Council, at the meeting held here on August 3, 1935, decided that the work of formulating standards be proceeded with, without further delay.

It may, therefore, be expected that the first assignment of work will be sent out shortly after the schools and colleges open in September. It is the intention to push the work along as rapidly as possible from now on, and it can be expected that the next report will be one of tangible progress.

During the past year, two of the associations represented on the Council have made their contributions of $200.00 each, to the working fund, making a total of $400.00 received. None of this has been spent to date, but is being held on deposit in Baltimore.

President Fischelis suggested that in sending out tentative standards, the Council on Pharmaceutical Education should express its opinion on them.

The report was received on motion of Arny—Beal.

138. Committee on N. F. and R. B. Policies. The chairman announced the appointment of Geo. D. Beal, H. V. Arny and E. F. Kelly as members of the Committee on which Chairman Gathercoal, Chairman Lascoff and Chairman Cook will serve as advisory members.

The appointments were approved on motion of Arny—Beal.

Chairman Geo. D. Beal stated that the members had met with Chairman Gathercoal and Cook, and submitted the following report:

August 8, 1935.

To the Council of the American Pharmaceutical Association:

Gentlemen: 1. Your Committee on N. F. and R. B. Policy wishes to give further consideration to the proposal of increasing or decreasing the number of members of the Committee on N. F. Revision and establishing a rotation of election, and to that end will correspond during the year and perhaps report by Council letter.

2. We recommend that the statement of general principles of N. F. Revision be formally approved at this time.

3. We recommend that the following statement be adopted by the Council and appended to the General Notices in N. F. VI.

"In conformity with the policy on scope of the National Formulary, and in recognition of the priority of the United States Pharmacopœia as a standard within the United States, notice is hereby given that should the Committee of Revision of the United States Pharmacopœia, Eleventh Decennial Revision, approve for admission and establish standards, by supplements, for items already included in the N. F. VI, the Pharmacopœial standards shall supercede those of the National Formulary when official notice by publication has been made of that action."

On motion of Geo. D. Beal—DuMez, the report was received and approved.

139. Addition to the 1935 Budget. The recommendation of the Committee on Horticultural Nomenclature that an appropriation of $20.00 be made for the expenses of the Committee, was approved and the appropriation was added to the budget for 1935, on motion of Beal—Arny.

140. Committee on National Pharmacy Week. The recommendation of the Committee that its appropriation be increased as submitted in its report to the House of Delegates and referred to the Council, was, after discussion, referred to the Committee on Finance for study and recommendation on motion of Adams—Geo. D. Beal.

141. Pharmacists' Society of the District of Columbia. A letter from President Norelli of the Society was read requesting some form of affiliation with the ASSOCIATION. After an extended discussion of the question and on motion of Beal—Geo. D. Beal, the secretary was authorized to reply to the communication.

On motion of Adams—Arny, it was directed that the letter be brought to the attention of the Committee on Resolutions.

142. The Proposed Publication. The issuance of the publication was discussed at length, attention being given to the expense involved, the policy with respect to advertising, its relation to the membership of the ASSOCIATION, the editorial policy and its contents.

On motion Geo. D. Beal—Christensen, the question of the proposed publication was referred to the Committee on Publications for the purpose of submitting a report on policy and budget as promptly as possible, and that consideration of the final report be had at a meeting of the Council to be held in December.

143. Suitable Emblem for the Association. Dr. Geo. D. Beal submitted the following communication:

During the making of plans for the interior decoration of the new building of the Mellon Institute of Industrial Research in Pittsburgh, Pa., thought was given to the incorporation in the floor of the entrance foyer of a series of brass patera symbolic of the professions that have advanced through research, and that have been instrumental, through their work, of advancing the course of industrial research in the United States. Anyone conversant with the subject naturally includes the AMERICAN PHARMACEUTICAL ASSOCIATION among the learned societies that typify such research.

While the A. PH. A. has a form of badge or button, and likewise an official seal, neither of these is symbolic of the profession and science of Pharmacy. Our policy on such patera is not yet definitely established, and we still have in mind the reproduction of our button. However, this only emphasizes the need for an ASSOCIATION emblem that is truly symbolic.

There is included herewith a rubbing of a symbol used by Eli Lilly & Co. on the cover of the souvenir book describing the recent dedication of their new research laboratory. Such an emblem is an illustration of the type that might be used by the A. PH. A.

"It is moved by Geo. D. Beal that a committee of the Council (new) be appointed to consider the question of a suitable emblem for the AMERICAN PHARMACEUTICAL ASSOCIATION, and to report to the Council upon the propriety of an emblem, together with suggestions regarding suitable designs to be adopted by the Council and the ASSOCIATION."

As a member of this committee I would like to propose the name of Dr. W. A. Hamor, Assistant Director of Mellon Institute, a member of the A. PH. A. and an authority on such matters. I am sure that Dr. Hamor would gladly give of his time to such an undertaking.

After discussion and on motion of Geo. D. Beal—Christensen, the chairman was authorized to appoint a special committee to consider the matter and to report to the Council.

The meeting then adjourned subject to the call of the chairman.

* * * * * * * * * *

The Fourth Meeting of the Council was held on the Multnomah Hotel on Friday evening, August 9, 1935, after the Final General Session, with the following members present: Hilton, Fischelis, Arny, Adams, Christensen, Swain, DuMez, Eberle and Kelly.

The minutes of the Third Session were read. After a discussion, the chairman ruled that the words "if the final report can be completed in the meantime" under Item 142 be omitted. The amended minutes were approved on motion DuMez—Fischelis.

144. Section on Practical Pharmacy and Dispensing. The request of the Section for an appropriation of $75.00 for the continued collection of information pertaining to professional pharmacy was referred to the Committee on Finance, on motion of Adams—Swain.

145. Committees on Library and on Museum. The secretary reported that nominations had been received from only two members of the Council (see Council Letter No. 13, pages 329 and 330 and Council Letter No. 16, page 511). After discussion, it was decided on motion of Arny—Adams, that these nominations be made a matter of business in the first Council Letter of 1935–1936.

There being no further business, the meeting was adjourned sine die.

E. F. KELLY, *Secretary.*

THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1935–1936.

Office of the Secretary, 2215 Constitution Ave., Washington, D. C.

LETTER NO. 1.

August 9, 1935.

To the Members of the Council:

The reorganization and First Meeting of the Council 1935–1936 was held in the Multnomah Hotel, Portland, Oregon, on Friday, August 9, 1935, beginning at 10:15 P.M.

1. The roll was called and the following were present: Hilton, Arny, Christensen, Adams, Fischelis, Swain, Costello, Delgado, Hayman, Cook and Kelly.

2. Election of Chairman. S. L. Hilton was elected Chairman of the Council for 1935–1936 on motion of Arny, seconded by Adams and carried.

3. Election of Vice-Chairman. H. C. Christensen was elected Vice-Chairman of the Council for 1935–1936, on motion of Swain, seconded by Arny, and carried.

4. Election of Editor of the Journal. E. G. Eberle was elected Editor of the JOURNAL for 1935–1936, on motion of Adams, seconded by Hayman and carried.

5. Election of Editor of the Year Book. A. G. DuMez was elected Editor of the YEAR BOOK for 1935–1936, on motion of Swain, seconded by Hayman and carried.

6. Membership of the Council. The membership and officers of the Council for 1935–1936 are as follows:

ELECTED MEMBERS.

H. V. Arny, 115 W. 68th St., New York, N. Y. (Term expires 1936.)
H. C. Christensen, 130 N. Wells St., Chicago, Ill. (Term Expires 1936.)
W. D. Adams, Forney, Texas. (Term expires 1936.)
H. A. B. Dunning, Charles & Chase Sts., Baltimore, Md. (Term expires 1937.)
S. L. Hilton, 1033 22nd St., N. W., Washington, D. C. (Term expires 1937.)

W. Bruce Philip, Munsey Bldg., Washington, D. C. (Term expires 1937.)
J. H. Beal, Fort Walton, Fla. (Term expires 1938.)
R. L. Swain, 2411 N. Charles St., Baltimore, Md. (Term expires 1938.)
C. H. LaWall, 214 S. 12th St., Philadelphia, Pa. (Term expires 1938.)

EX-OFFICIO MEMBERS.

P. H. Costello, Cooperstown, N. Dak.
Frank A. Delgado, Department of Commerce, Washington, D. C.
J. Lester Hayman, 325 Ash St., Morgantown, W. Va.
R. P. Fischelis, 28 West State St., Trenton, N. J.
E. F. Kelly, 2215 Constitution Ave., Washington, D. C.
C. W. Holton, Box 81, Essex Fells, N. J.
Roy B. Cook, 1559 Lee St., Charleston, W. Va.
E. G. Eberle, 2215 Constitution Ave., Washington, D. C.
A. G. DuMez, Lombard & Greene Sts., Baltimore, Md.

OFFICERS OF THE COUNCIL.

S. L. Hilton, *Chairman*.
H. C. Christensen, *Vice-Chairman*.
E. F. Kelly, *Secretary*.

7. Finance Committee. Chairman Hilton appointed W. Bruce Philip, *Chairman*, C. H. LaWall and C. W. Holton as members of the Committee on Finance and these appointments were confirmed on motion of Arny, seconded by Delgado and carried.

8. Committee on Property and Funds. The personnel of this Committee, as provided for in the Council By-Laws, is as follows: P. H. Costello, C. W. Holton, S. L. Hilton, W. Bruce Philip and E. F. Kelly.

9. Committee on Publications. Chairman Hilton appointed H. V. Arny, C. H. LaWall and Walter D. Adams as members of the Committee, the other members being E. G. Eberle, E. F. Kelly, A. G. DuMez and C. W. Holton, as provided in the By-Laws. These appointments were confirmed on motion of Arny, seconded by Delgado. Chairman Hilton appointed A. G. DuMez as *Chairman* of the Committee on Publications.

10. Committee on Standard Program. The chairman appointed S. L. Hilton, T. J. Bradley and E. F. Kelly as members of the Committee on Standard Program.

11. Advisory Committee of the Council. It was moved by Swain that the chairman be authorized to appoint an Advisory Committee consisting of seven members, to be held subject to the call of the chairman or secretary, to confer on matters not considered of sufficient importance to warrant a meeting of the Council and to appoint the members subject to confirmation by the Council. The motion was seconded by Christensen and carried.

12. Committee on Pharmaceutical Research. On motion of Arny, seconded by Swain and carried, W. L. Scoville and John C. Krantz, Jr., were elected members of this Committee to serve until 1940.

13. Commission of Proprietary Medicines. On motion of Fischelis—Arny, the Commission was discontinued.

14. Committee on Proprietary Medicines. On motion Fischelis—Arny, it was decided to elect a committee of seven members to take the place of the Commission on Proprietary Medicines, and to serve for one year. J. H. Beal, R. P. Fischelis, R. L. Swain, F. A. Delgado, W. B. Day, Roy B. Cook and A. L. I. Winne were nominated and on motion Arny—Hayman, the nominations were closed and the secretary was authorized to cast the ballot of the Council for their election. The secretary cast the ballot and the chairman declared the nominees elected.

15. Committee on Recipe Book. After a general discussion, it was moved by Arny that the Committee on Recipe Book, as listed by chairman Lascoff, be continued for one year. The motion was seconded by Adams and carried.

16. Appointment of Standing and Special Committees and Delegates of the Association.

Committees.

Committee on the Study of Pharmacy.—Same as at present. *Committee on Cosmetics.*—Same as at present. *Committee on Local Branches.*—Same as at present. *Board of Canvassers.*—Gustav Bachman, Charles V. Netz and Charles H. Rodgers, all of Minneapolis, Minn. *Committee on Legislation.—Chairman*, E. F. Kelly, Washington, D. C.; R. P. Fischelis, Trenton, N. J.; S. L. Hilton, Washington, D. C.; R. L. Swain, Baltimore, Md., and W. Bruce Philip, Washington, D. C. *Committee on U. S. Pharmacopœia.*—Same as at present except that Arthur F. Schlicting, St. Louis, Mo. (1945) replaces Theodore F. Hagenow. *Committee on Pharmaceutical Syllabus.*—E. R. Serles reappointed for term ending 1942. *Committee on Pharmacy Week.*—Same as at present. *Committee on Horticultural Nomenclature.*—Same as at present. *Committee on Physiological Testing.*—Same as at present. *Committee on Weights and Measures.—Chairman*, M. N. Ford, Columbus, Ohio; R. P. Fischelis, Trenton, N. J.; W. Mac Childs, Eldorado, Kans.; A. C. Taylor, Washington, D. C.; Roy D. Baker, Denver, Colo.; the Chairman of the Section on Practical Pharmacy and Dispensing; and the Chairman of the Committee on Prescription Tolerances. *Committee on William Procter Jr. Memorial Fund.*—Same as at present. *Committee on International Pharmaceutical Nomenclature.*—Same as at present. *Committee on Press Relations.*—Same as at present except that R. W. Rodman becomes *Chairman*. *Committee on Prerequisite Legislation.*—Same as at present. *Committee on Endowment Fund.*—Same as at present. *Committee on Maintenance.*—Same as at present. *Committee on Pharmacy Corps.*—Same except E. E. Duncan, Oklahoma City, Okla., replaces F. L. McCartney. *International Pharmaceutical Federation.*—Same as at present. *Committee on Prescription Tolerances.*—Same except M. J. Andrews, Baltimore, Md., replaces Walter F. Meads. *Committee on Council on Pharmaceutical Practice.*—Same except that P. H. Costello, Cooperstown, N. Dak., replaces R. P. Fischelis. *Committee to Draft Model Act Restricting Distribution of Drugs and Medicines to Pharmacists.*—Same except that H. C. Christensen, Chicago, Ill., replaces F. E. Mortensen. *Committee on Professional Relations.*—Same as at present.

On motion Adams—Delgado, the appointments, as submitted, were approved.
The meeting then adjourned.

E. F. KELLY, *Secretary.*

ASSOCIATIONS.

Information has come that there probably will be no meeting of the Nevada Association this year.

At the meeting in Portland, Oregon, rebates and allowances, not open to all retailers, were condemned by resolution of the Oregon Pharmaceutical Association. Another resolution enlisted the coöperation of druggists in the state in fighting cut-rate stores. It has been suggested that the idea of holding a tri-state meeting will be repeated next year.

Don F. Allen, of Corvallis, Ore., was elected president of the Oregon Association and Charles J. Ajax, of Seattle, was reëlected president of the Washington State Pharmaceutical Association. Idaho druggists did not hold a reëlection.

James L.O'Neill, who has headed the new NRA for the past two months, has resigned from administration duties to return to his old position as acting vice-president of the Guaranty Trust Company in New York City.

Howard C. Newton, who joined the staff of Creighton University School of Pharmacy in 1914, and who has served as dean of the School during those years, is leaving the School and the middle west to join the faculty of the Massachusetts College of Pharmacy at Boston.

J. Leon Lascoff completed his 25th year on the New York Board of Pharmacy and has been re-appointed a member.

Roy A. Perry, president of the Oregon Pharmaceutical Association, advocates the movement of "Back to Pharmacy," and advancing the standards of Professional Pharmacy.

H. W. Youngken was elected Grand Regent of the Kappa Psi in Portland, succeeding Grand Regent Mickelsen whose term expires in 1936. Dr. Youngken will be installed at the convention in Dallas.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON RESOLUTIONS.*

Recommendations 1 to 17, inclusive, were submitted by President Fischelis at the conclusion of his Presidential Address.

The months intervening since the 1934 convention of the AMERICAN PHARMACEUTICAL ASSOCIATION have been very important not only in the life of the nation itself, but in the affairs of this ASSOCIATION. Pharmacy has been confronted with problems of great complexity and importance, many of which at times seemed to threaten the existence of our calling as a profession. In the face of such circumstances, intelligent aggressive leadership was required, and it should be a matter of gratification to the members of this ASSOCIATION that President Fischelis approached and discharged his duties in a frank and courageous manner.

Recommendation No. 1.

It is recommended that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to require its full-time officers to confine their pharmaceutical activities to the affairs of the ASSOCIATION. This is not to be interpreted as an abridgment of the privilege to take part in related affairs in the capacity of advisor, committeeman or delegate. It is, however, to be interpreted as abridging the privilege of serving in a secretarial or managerial capacity to any other organization or group or to act as the spokesman or representative of any other organization or group within the sphere of pharmaceutical activity unless permission to do so is specifically granted by the Council.

The Committee is sympathetic with the principle of this recommendation in the President's Address but feels that the purpose can be fully effectuated by referring it to the Council for further study and for whatever action it deems to be in the best interest of the ASSOCIATION.

By vote of the House of Delegates the President's recommendation was substituted for the recommendation of the Committee on Resolutions.

Recommendation No. 3.

It is recommended that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to work actively toward a unification of pharmacal forces within the United States and that the immediate steps to be taken in this direction shall be the fostering of an intimate contact with the State Pharmaceutical Associations and with the National Association of Retail Druggists to the end that membership in State Pharmaceutical Associations shall eventually carry with it a personal affiliation of every State Association member with the A. PH. A. and the N. A. R. D.—Approved.

Recommendation No. 4.

It is recommended that it shall be the policy of the AMERICAN PHARMACEUTICAL ASSOCIATION to assume active responsibility for the general direction of pharmaceutical affairs in the United States. This is not to be interpreted as an effort to duplicate the activities of any organization now functioning in a specific field such as education, licensure, manufacturing, wholesaling or retailing. It is, however, to be interpreted as an offer of coöperation from the representatives of the profession at large with respect to the formulation of policies affecting pharmacy as a whole and as an expression of the intent to assume leadership in those matters which are national in their scope and which affect the relations of pharmacists to other professions, the relations of pharmacists to each other and the relations of pharmacists to the public.—Approved.

Recommendation No. 6.

It is recommended that that office of Librarian and Curator of the Museum be created as soon as possible as a full-time office.—Approved.

Recommendation No. 7.

It is recommended that the contents of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION be confined to scientific and professional papers of permanent value or significance,

* Portland meeting of AMERICAN PHARMACEUTICAL ASSOCIATION.

to the monthly abstracts of pharmaceutical literature and to editorials dealing with scientific and professional matters. It is further recommended that as soon as this change can be brought about, the material of general interest now appearing in the JOURNAL together with helpful papers and articles on professional and economic subjects be issued in the form of a new monthly publication directed particularly to the retail pharmacists of the United States. It is further recommended that this publication carry no advertising.—Approved.

Recommendation No. 8.

It is recommended that the new JOURNAL referred to in the preceding recommendation be mailed to the members of all State Pharmaceutical Associations upon payment of a small per capita tax by the respective state Associations and that it be issued with the coöperation of the N. A. R. D. if the plans for unification and coördination of the activities of State Associations and the two national associations now under discussion are consummated.—Approved.

Recommendation No. 9.

It is recommended that the coöperation of the A. PH. A. be extended to Boards of Pharmacy in their efforts to establish adequate standards for the practical training of pharmacists, especially in cases where departures from established customs are contemplated and that the results of any survey or study which the ASSOCIATION may make in connection with the formulation of standards for practical experience, be made available to the Boards.

The Committee on Resolutions is fully in accord with the principles and objective of this resolution, but the Committee feels that it deals more particularly with the work of the National Association of Boards of Pharmacy and the American Council on Pharmaceutical Education, therefore as chairman of the Committee, I am instructed to move that this recommendation be sent to the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION, and the secretary of the N. A. B. P. and the secretary of the American Council on Pharmaceutical Education, and to the Council on Pharmaceutical Practice (added on recommendation of President Fischelis), for their consideration.—Approved.

Recommendation No. 10.

It is recommended that the dangers of the distribution of drugs and medicines without the supervision of pharmacists be called to the attention of the American Medical Association and Medical Societies of various states with the request that they join the A. PH. A. in an aggressive effort to pursuade drug manufacturers to limit distribution of their drug products to registered pharmacists.—Approved.

Recommendation No. 11.

It is recommended that the Council on Pharmaceutical Practice give consideration to certification of specialists in the field of hospital pharmacy, manufacturing pharmacy and prescription pharmacy, by the establishment of boards of experts for such certification.—Approved.

Recommendation No. 12.

It is recommended that the committee on study of pharmacy be instructed to explore the possibilities of extension courses for practicing pharmacists to the end that formal lectures and demonstrations in connection with newer materia medica may be arranged at suitable points and that such instruction be confined to fundamental scientific progress in the field rather than to commercial preparations.—Approved.

Recommendations Nos. 2, 5 and 13.

(2) It is recommended that the secretary of the ASSOCIATION be also designated as general manager and that this title shall carry with it executive supervision of and responsibility for the activities of the ASSOCIATION in the headquarters building.

(5) It is recommended that the president-elect be made an ex-officio member of the Council immediately following his election and that the procedure at the annual convention be so arranged as to give the president-elect an opportunity to submit recommendations in time for approval at the meeting at which he takes office.

(13) It is recommended that the By-Laws be amended to reduce membership of the Council

to six elected members and three ex-officio members, namely: the President, the President-Elect, and the Chairman of the House of Delegates. The six elected members should be distributed geographically in accordance with the concentration of membership.

The Recommendations 2, 5 and 13 in the President's Address are not approved but the Committee on Resolutions wishes to present the following resolution dealing with them:

Resolved, that while it is quite clear that Recommendations 2, 5 and 13 in the President's Address have been carefully considered by the President, and also by the members of the Committee on Resolutions, it is the opinion of the Committee that the recommendations herein referred to raise important questions which suggest the advisability of a general study of the By-Laws of the ASSOCIATION. To make them effective will, in the opinion of the Committee, require amendments to the By-Laws and perhaps the charter of the ASSOCIATION. For these reasons, it is recommended that the incoming president appoint a committee of five (5) to study the constitution and By-Laws of the ASSOCIATION and to report to the next annual meeting on changes which it deems necessary to make in the constitution and By-Laws and charter of the ASSOCIATION to place the ASSOCIATION in a position to function most effectively in the light of the new duties which it will be called upon to undertake and in the light also of the widened responsibilities of the ASSOCIATION.

Be it further resolved, that the committee appointed pursuant to the above resolution endeavor to complete its task in time to have its findings and recommendations submitted by publication to the membership sufficiently far in advance of the 1936 meeting to enable the membership to be apprised of the changes proposed.—Approved.

Recommendation No. 14.

It is recommended that the Council be authorized to take such steps as may be necessary to obtain the best legal opinion on the status of the National Formulary as a legal standard under the Food and Drugs Act and that such changes as may be required in the manner of selecting the Revision Committee in order to obtain Congressional authorization for the revision and publication of the National Formulary, be inaugurated as soon as possible. It is further recommended that the U. S. P. Revision Convention be urged to take similar steps with respect to the U. S. P.

The Committee did not take any action on this recommendation in the President's Address as it deals with matters more properly within the province of the Council, and we therefore recommend that it be referred to the Council for further consideration.—Approved.

Recommendation No. 15.

It is recommended that the Committee on Proprietary Medicines be requested to study the possibilities of organizing an informational service to the profession with regard to the Composition, Standards, Classification and ethical status of proprietary medicines and report its recommendations to the Council for action at an early date.—Approved.

Recommendation No. 16.

It is recommended that the Committee on Cosmetics be requested to give immediate attention to the possibility of organizing a Council on Cosmetic Preparations with functions similar to the Council on Pharmacy and Chemistry of the A. M. A. and the Council on Dental Therapeutics of the A. D. A. so that necessary information on the composition and claims made for cosmetics may become available to pharmacists and proper standards be devised for the protection of the public in the commerce in these Commodities.—Approved.

Recommendation No. 17.

It is recommended that the Council give immediate attention to the possibility of making available from the permanent funds, accumulated interest or other sources, a sufficient sum of money to launch some of the activities to which the ASSOCIATION is committed. In launching these activities, preference should be given to the ones which appear to promise the most immediate return of the financial outlay required in their inauguration. Activities which seem to require immediate attention are revision of the publication program; membership campaigns; Council on Pharmaceutical Practice.—Approved.

Resolution of the New York Branch.

WHEREAS the AMERICAN PHARMACEUTICAL ASSOCIATION by virtue of its constituency should be the major representative body of American Pharmacy, and

WHEREAS such a position is dependent in part upon the AMERICAN PHARMACEUTICAL ASSOCIATION having a greater membership among those engaged in the various phases of pharmacy in the United States, and

WHEREAS the Local Branches of the AMERICAN PHARMACEUTICAL ASSOCIATION are the logical points of contact between the individual member and the parent organization, and

WHEREAS more extensive activity fostered by financial support of the Local Branches may be a possible factor in increasing membership in the AMERICAN PHARMACEUTICAL ASSOCIATION—

Be it resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION give consideration to the desirability of having all members of this ASSOCIATION residing in districts wherein duly organized Local Branches are, or may be, established, automatically become members of the local body by virtue of their membership in the AMERICAN PHARMACEUTICAL ASSOCIATION, and

Be it further resolved, that the annual dues of each member of the AMERICAN PHARMACEUTICAL ASSOCIATION include membership in the Local Branch of his district or election, if such a body is at present organized or may later be formed within a radius of fifty (50) miles of his mailing address, and that the AMERICAN PHARMACEUTICAL ASSOCIATION allocate 50¢ (or $1.00) yearly to said Local Branch for each duly elected member thereof, such sum to be in lieu of the dues now collected by the Local Branches, and

Be it further resolved, that members residing in a district bordering upon an adjacent district may signify their choice of the Local Branch they wish to identify themselves with but in no instance shall such choice be permitted unless they reside within a radius of 50 miles of the Local Branch of their election.

This resolution is approved by the Committee but inasmuch as it deals with the finances of the ASSOCIATION under the By-Laws it is referring it to the Council of the ASSOCIATION.

Report of the Committee on Local Branches.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION do all that is practical to increase interest in the establishment of Student Branches of the ASSOCIATION in the several colleges of pharmacy of the United States and that it give due consideration to the question of student dues so that the burden upon the student may be reduced to the lowest possible amount.

This resolution is formulated upon the report of the Committee on Student Branches and as it does in some respects deal with the finances of the ASSOCIATION, under the By-Laws it automatically goes to the Council.

Report of the Committee on Weights and Measures.

The Committee on Resolutions commends the report of the Committee on Weights and Measures and believes that the suggestions made in the report are constructive and recommends that the report be printed in the JOURNAL so that it may come to the attention of all those interested in improving conditions dealt with in the report and those charged with the duty of enforcing such laws as are involved.

Recommendation from the Section on Education and Legislation.

Be it resolved, that a committee be appointed by the President of the ASSOCIATION to be known as the National Committee on Professional Information Pertaining to Dental Pharmacy. Its specific function shall be:

First—To study the methods used by the various local, county and state organizations in their efforts to bring before dental men usable information on U. S. P. and N. F. drugs and preparations.

Second—To present to the pharmacists of the nation at our next annual convention a digest of constructive ideas gathered from such a survey and other sources.

Third—The Committee is to act as a center for receiving and disseminating information which will increase the pharmacist's opportunities for professional scientific service to the dentist.—Approved.

Recommendations from the Section on Historical Pharmacy.

Resolved, that a committee of three (3) be authorized to be made in the regular way whose duty it shall be to study courses in History of Pharmacy giving especial attention to the scope, time and content of such courses and to bring a report of its findings to our next annual meeting and

Be it further resolved, that a copy of this resolution be sent to the American Association of Colleges of Pharmacy, American Council on Pharmaceutical Education and the Syllabus Committee.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION by proper means, classify, edit and publish the papers which have been presented before the Section on Historical Pharmacy, in an effort to create interest in the subject of the History of Pharmacy and to make more readily available the information contained in the papers which have been presented from time to time.

While the Committee on Resolutions is in general accord with the spirit of this resolution, it does not feel that this is the proper time to recommend expenditure of funds on this subject.

Establishment of a Fellowship within or under the Auspices of the American Pharmaceutical Association.

WHEREAS, the AMERICAN PHARMACEUTICAL ASSOCIATION is an organization of pharmacists, including nearly all leaders in American pharmacy and those who are interested in the scientific accomplishments of our profession:

WHEREAS, these professional and scientific workers deserve, in recognition and appreciation of the important services which they actually render and have rendered in the past to humanity and to pharmacy in America, to be honored in a certain way as to show the expression of gratitude of the AMERICAN PHARMACEUTICAL ASSOCIATION for the work accomplished either in a professional, scientific or legal aspect;

WHEREAS, THIS ASSOCIATION is much concerned with the question herein aroused; *therefore be it*

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION establish the grading of Fellow to be granted to all pharmacists who are college graduates and who have distinguished themselves and devoted their lives to improve the conditions of the profession in any of the aspects hereinbefore mentioned;

And, that a Committee to work on behalf of the ASSOCIATION be appointed in this Eighty-Third Annual Meeting to establish the rules and regulations by which this Fellowship is to be granted.

The Committee is mindful of the good intent behind this resolution but feels that this is not the proper time to discuss a matter of such far-reaching importance. We therefore recommend that it be referred to the Council to be considered in connection with whatever plans may come before the Council dealing with the membership of the ASSOCIATION.—Approved.

American Association for the Advancement of Science.

In response to an invitation from the permanent secretary of the American Association for the Advancement of Science, the Committee offers the following resolution:

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION appoint two delegates to the Seventh American Scientific Congress to be held in Mexico City from the 8th to the 17th of September of this year and that these delegates be instructed to participate as fully as possible in all the efforts to make the Congress a success.—Approved.

The following resolution is formulated upon two resolutions, one coming from the Indiana Pharmaceutical Association and the other from the Section on Education and Legislation:

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION create a body or bodies with the necessary working facilities to give the pharmacists in this country up-to-date information on such pharmaceutical and medical material as new drugs, preparations, formulas, standards, plans for detailing doctors and dentists, as well as other medical groups, and other information which will prove helpful and be instrumental in increasing the coöperation and service of the pharmacist to the allied medical professions. This information is to appear periodically throughout each year and some method be devised so that all pharmacists may be privileged to take advantage of such

pharmaceutical service.—This resolution is approved and referred to the Council as obviously to make it effective will require some financial outlay.

Resolved, that the Committee known as The American Institute of Pharmacy Maintenance Committee be continued and that Dr. H. A. B. Dunning of Baltimore be asked to accept the chairmanship of the committee for the ensuing year.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION restate its belief that the present food and drugs act is too limited in its scope to afford the public the proper protection in the matter of food and drugs and cosmetics and that the ASSOCIATION endorse the bill now before Congress known as S-5 substantially in the form in which it passed the Senate and urge its prompt enactment and its officers are instructed to coöperate as fully as possible with all other agencies having this end in view and that a copy of this resolution be immediately sent to the chairman of the committees having the bill in charge.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION restates its interest in all efforts to make the medical and dental professions more fully acquainted with the drugs and preparations recognized in the U. S. P. and N. F., and instructs its officers to coöperate to the fullest extent possible with national, state and local pharmaceutical organizations endeavoring to carry on this important branch of pharmaceutical activity.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION in order that there may be built up a sounder economic basis for the retail practice of pharmacy, urges the NRA to compile such statistical information in its possession bearing upon the commercial problems of pharmacy and to make them available as rapidly as possible;

Resolved further, that the NRA be urged to continue the study of commercial problems affecting pharmacy in the various parts of the United States so that accurate information dealing with modern business practices and trends may be available.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION restate its conviction that the purposes of pharmacy would be further advanced by placing pharmacists on boards of health of the various states, and urges that state pharmaceutical associations be asked to place this objective on their legislative programs.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION express its profound appreciation of the success met with in Arizona, Iowa, Michigan and New Mexico in enacting prerequisite laws and that its officers be instructed to coöperate with those states that do not have such legislation as fully as may be required to secure the enactment of such laws.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION urges increased interest on the part of the state pharmaceutical associations in all efforts to secure legislation which will more adequately restrict the distribution of drugs and medicines to registered pharmacists, it being the unshaken belief of the ASSOCIATION that there does exist a direct relation between public health and the avenues of distribution of these essential public health commodities, and that the officers of the ASSOCIATION aid in all efforts to bring this about.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION extend its congratulations to the pharmaceutical associations of the following states: New York, New Jersey, Pennsylvania, Maryland, Illinois, Wisconsin, Iowa, Oregon and Washington, for having secured the enactment of fair trade legislation patterned after the California fair trade act;

Resolved further, that it is the sense of this ASSOCIATION that more certain progress will be made if uniformity is obtained in the matter of contracts and administrative procedures under these laws;

Resolved further, that the ASSOCIATION instructs its officers to coöperate as fully as possible with the N. A. R. D. and all state pharmaceutical associations in an effort to have similar legislation enacted in all of the states.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION express its belief that decided improvement was made in the economic phases of pharmacy under the NRA code and that it regrets that this recovery movement failed to meet constitutional requirements, and

Resolved, that in order that the benefits of NRA may be continued and still further advanced

the ASSOCIATION urges the enactment of federal legislation which will permit the people of the states having fair trade laws to enjoy the maximum benefits of these laws, and

Resolved further, that it instruct its officers to coöperate to the fullest extent possible with the N. A. R. D. and other pharmaceutical agencies in their efforts to secure the enactment of such a law by the Federal Congress.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION desires to express its gratification to the American Association for the Advancement of Science for the creation of Section N-3 Pharmacy and for the opportunity to present a separate program illustrating the contributions of pharmacy to the advancement of science.—Approved.

Resolved, First, that the Committee on Pharmacy Corps in U. S. Army be continued and that it be instructed to continue its efforts to effect improvement in the pharmaceutical service in the Army and to obtain therein for pharmacy the recognition and status to which it is entitled by virtue of its traditions and the useful service which it is prepared, by education and training, to render.

Second, that the Committee be instructed to coöperate with the Surgeon General in obtaining the passage of legislation which will bring about the substance of recommendation number one.

If the objective as stated in the first recommendation cannot be attained by this procedure, we recommend

Third, that the committee be instructed to obtain the desired improvement in pharmaceutical service and its concomitant recognition by direct bill to congress.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION state its firm conviction that increased attention should be given to professional pharmacy and to making the public more conscious of the public health service rendered by pharmacy, and to this end urges more general observance of National Pharmacy Week and instructs its officers to coöperate fully with state pharmaceutical associations and other pharmaceutical groups in the observance of this occasion.—Approved.

Resolved, that the Committee on the William Procter Junior Memorial Fund be requested to proceed with the erection of the Procter statue in the foyer of the American Institute of Pharmacy as soon as practicable and that in conjunction with the Council, arrangement be made for its unveiling when completed.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION express its deep appreciation to the Department of Commerce for the coöperation furnished by the Department through F. A. Delgado and Arthur A. Kimball in the preparation of the manuscript for "The Professional Pharmacy" and in the revision of the manuscript for further publication.—Approved.

Resolved, that the voting delegates from the State Pharmaceutical Associations be designated as auxiliary members of the Committee on Professional Relations and that the members of this Auxiliary Committee be urged to actively coöperate with the members of the medical, dental, nursing and other professions in the consideration of the economic problems of medical care.—Approved.

WHEREAS, some proposed methods of providing medical care to the public through Federal, State and private agencies contemplate corporate practice involving elimination or serious interference with the personal and private relations between members of the medical, dental, pharmacal and nursing professions and their clientele, *be it*

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION expresses the belief that it is essential to good medical care and to the welfare of the public that the personal relation between those engaged in the practice of medicine, dentistry, pharmacy and allied professions, and their clientele, be preserved.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION express its profound thanks to the pharmaceutical associations of Oregon, Washington and Idaho for having held a joint convention in the city of Portland during the week of the AMERICAN PHARMACEUTICAL ASSOCIATION convention and for the splendid hospitality extended by the pharmacists of these three states to the members of the AMERICAN PHARMACEUTICAL ASSOCIATION.—Approved.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION hereby extends sincere appreciation to Local Secretary A. O. Mickelsen, Chairman L. G. Haack, F. C. Felter, Frank Nau,

Frederick Grill, Fred Geue, Earl Gunther, Edgar Stipe and all others who have contributed to the comforts of our delegates, for the most efficient and hospitable handling of accommodations and social events for the 83rd annual meeting.

Appreciation is also extended to Mrs. Ralph A. Watson, Mrs. Mickelsen, Mrs. Larson, Mrs. Dickey and Mrs. Murphy for the courteous and enjoyable entertainment extended to the ladies attending the meeting.

Appreciation and thanks is extended to the Hotel Multnomah for the favors and courtesies extended the A. PH. A. guests and for the efficient service in preparing convention halls for meetings.

The ASSOCIATION further extends appreciation to the *Morning Oregonian, Journal* and *News-Telegram* for their full and impartial report of the transactions of the meeting.—Approved.

	E. R. SERLES	L. L. WALTON
	GEORGE C. SCHICKS	M. N. FORD
(Signed)	F. E. BIBBINS	A. L. I. WINNE
	ROY B. COOK	WALTER D. ADAMS

R. L. SWAIN, *Chairman.*

RELIEF PRESCRIPTIONS BY STATES.

The following schedules are abstracted from the N. A. R. D. Journal:

Washington follows "Pacific Drug Review Pricing Schedule," less 25%.

California prescriptions are recorded in duplicate. Prescription pricing schedule is set up from which druggists must give 25% discount. Cost of one prescription is limited to $1.00; two or more $2.00.

New York prescriptions must be verified by phone, and copy signed by patient sent with quadruplicate bill. U. S. P. and N. F. drug required with few exceptions but specialties are not replaceable by official equivalents. Prices to be net cost plus 25¢.

In Ohio U. S. P. and N. F. preparations are specified. Charges to be net cost plus a 25¢ compounding fee.

South Carolina: relief prescriptions are filled on requisition orders from a field agent, a copy of which is attached to the requisition and mailed to the relief administration at the county seat.

Minnesota restricts to U. S. P. and N. F. items. Charge includes cost plus 20%. Medicines and medical supplies are to be furnished by registered pharmacists actually engaged in drug business.

In Mississippi no special procedure has been worked out.

New Jersey prescriptions are written on special forms. Druggists file copies with the county director. Once a month a county committee, appointed by the New Jersey Pharmaceutical Association goes over the prescriptions. If exorbitant prices are charged, they are corrected.

In Kansas, each county has its own method of handling.

Rhode Island druggists may fill prescriptions signed by social workers in their town, but in cities where hospitals are supported by the city the prescriptions must be filed by the hospital.

In West Virginia prescriptions are to be written on special forms. General price range about 15% under normal.

In Idaho, U. S. P. and N. F. items specified. The doctors to supply four copies of order. The recipient must sign and quantities are limited as well as maximum prices.

Indiana has no uniform plan.

Massachusetts has no uniform plan.

Texas prescriptions are handled on orders from local relief headquarters; copy of prescriptions are attached to bills. A fee of 25% is added for expense of bookkeeping.

Georgia has no uniform practice.

In Wyoming, individual counties handle the practice; usually they are divided equally among drug stores in the county.

In Florida, relief medical work is handled by a relief clinic. Druggists formerly filled the prescriptions, but now pharmacists are employed by the clinics.

In Oregon County nurses take care of relief prescriptions. Counties pay bills.

Colorado has no general rules.

Pennsylvania specifies U. S. P. and N. F. preparations. Prescriptions are to be written on special forms and authorization attached to duplicate bills. Prescriptions costing more than 50¢ must have special authority.

UNITED STATES PHARMACOPŒIA.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.

ELEVENTH REVISION.

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PART II—PROXIMATE ASSAYS.

The Pharmacopœial Convention of 1930 recommended that "abstracts of changes proposed for the U. S. P. XI and new standards and descriptions" be published before final adoption, that those who are not members of the Revision Committee may have an opportunity for comment and criticism.

In compliance with this recommendation, the following abstracts are submitted. The nomenclature and the exact wording to not necessarily represent that to be finally adopted.

Comments should be sent to the chairman of the Revision Committee.

E. FULLERTON COOK,
43rd and Woodland Avenue,
Philadelphia, Pa.

The most important changes proposed for the proximate assays of the U. S. P. XI are as follows:

1. Instead of using type processes for assays as was done in the U. S. P. X, the detailed assay process will accompany each drug.

2. The general statement for proximate assays has been rewritten and will be found below.

3. The process for the assay of mydriatic drugs has been changed. This change was made necessary by the research work of Dr. H. G. DeKay, who showed that, in the case of hyoscyamus at least, volatile amines were present and therefore it was necessary to heat the residues to eliminate them. It was proved conclusively that mydriatic alkaloids in the absence of moisture and alkalies can be subjected to the temperature of a water-bath for an hour or more without decomposition. The proposed change will be indicated under the *Assay of Hyoscyamus*.

4. It is proposed to assay *Nux Vomica* for strychnine content instead of for total alkaloids.

5. An assay process is proposed for *Camphorated Tincture of Opium*, a preparation which heretofore has not been officially assayed.

6. Minor changes in the assay processes of a number of drugs are indicated on the following pages.

The General Directions on Proximate Assays, to appear in the back of the Pharmacopœia, are as follows:

GENERAL DIRECTIONS FOR THE ASSAY OF DRUGS.

Most alkaloids are practically insoluble in water, but are soluble in certain organic solvents which are immiscible with water, such as chloroform, ether, amyl alcohol, benzene, petroleum benzin or mixtures of these. The salts of the alkaloids, however, are usually soluble in water, but in most cases insoluble in nearly all of the above-mentioned solvents. The process of assay by immiscible solvents, which is generally known as the "shaking out" process, is based on this property of alkaloids and their salts, and is carried out by treating the drug or a concentrated liquid extract with a solvent immiscible with water, in the presence of an excess of alkali which liberates the alkaloid. The free alkaloid is dissolved by the immiscible solvent which is then transferred to a separator and extracted with an excess of acid which has been diluted with distilled water. The acid portions are then extracted with an immiscible solvent in the presence of a slight excess of alkali, and the immiscible solvent evaporated to obtain the alkaloids.

Weighing of Portions for Assay.—In the preparation of drugs for assay, all portions directed to be weighed should be weighed accurately, but with crude drugs, accuracy to the second decimal point is sufficient. Portions of pilular extracts may be weighed on a piece of waxed or parch-

* Permission to reprint for purposes of comment can be had on application to the chairman of the Board of Trustees, James H. Beal, Fort Walton, Fla.

mentized paper, the surplus paper cut away, and the extract and adhering paper dropped into a separator, beaker or dish containing the solvent, and the extract dissolved. In transferring weighed portions to a separator, the dish containing the material to be assayed should be thoroughly rinsed and the rinsings added to the separator.

Extraction of the Drug.—The drug to be extracted should be ground to a powder of the fineness designated (from a No. 40 to a No. 80 powder) and a representative portion selected for the assay and accurately weighed. The drug must not be coarser than the size directed, although a finer powder may be used. The definition of powders will be given. Care should be taken to avoid the loss of water during the powdering of the drug. If it be impossible to avoid this loss, the drug should be dried at a low temperature before powdering, the loss of water noted and a correction made in the final calculations.

METHODS OF EXTRACTION.

A. By Maceration.—An accurately weighed portion of the ground drug is treated with the specified solvent or mixture of solvents made alkaline with ammonia T.S. and thoroughly mixed and allowed to macerate for from twelve to twenty-four hours with occasional agitation, or for a shorter period with continuous agitation. At the end of this period, the drug is allowed to settle and then an aliquot portion of the solvent decanted and used for the extraction of alkaloids.

B. By Percolation.—An accurately weighed quantity of the ground drug is placed in a suitable container and completely saturated with the specified solvent or mixture of solvents and allowed to stand for five minutes. A sufficient quantity of ammonia T.S. to make the drug alkaline is added and thoroughly mixed with the drug. The moistened drug is transferred to a cylindrical percolator, previously prepared by packing the outlet with purified cotton. A small amount of the solvent may be used to rinse the container and the rinsing added to the percolator. The drug is allowed to macerate for a suitable period of time (from one to twelve hours or over night, depending upon the drug to be assayed), then the drug is firmly packed, a pledget of purified cotton placed above it and percolated slowly until the drug is completely extracted. Complete extraction of the alkaloid is determined by evaporating about 4 cc. of the last percolate to dryness, dissolving the residue in dilute acid and adding a drop of mercuric potassium iodide T.S. or, when testing for caffeine or colchicine, a drop of iodine T.S. There should be no turbidity produced by these reagents. The percolate is then treated for the extraction of the alkaloids.

C. By Continuous Extraction.—An accurately weighed portion of the ground drug is placed in an extraction thimble and the thimble transferred to a suitable extractor (a Soxhlet extractor of appropriate size is satisfactory). The drug is moistened with the specified solvent and mixed by means of a stirring rod and allowed to stand about five minutes. It is then made alkaline with the specified quantity of ammonia T.S. and thoroughly mixed. The stirring rod is rinsed with a small portion of the solvent and the drug allowed to macerate for from six to twelve hours or over night. The drug is covered with a pledget of purified cotton and packed in the thimble, a sufficient quantity of solvent is added and the drug extracted for a specified period of time. The solvent remaining in the extraction chamber is transferred to the receiving flask and the liquid extract treated for the extraction of alkaloids.

Extraction of Alkaloids.—The volume and strength of the acid to be used is usually left to the discretion of the operator. It is best, however, to keep the total volume as small as possible. For the first extraction, it is advisable to use at least 10 cc. of normal acid or sufficient to render the mixture distinctly acid; for succeeding extractions, it is preferable to use 5 cc. of normal acid and 5 cc. of distilled water. In all assays, the extraction should be continued until 0.5 cc. of the acid washings show only a very faint cloudiness on the addition of a drop of mercuric potassium iodide T.S., or, in the case of caffeine and colchicine, on the addition of a drop of iodine T.S.

The combined acid solutions containing the alkaloid are shaken thoroughly with the appropriate immiscible solvent and allowed to stand until the mixture has completely separated. The acid solution is then drawn off into a second separator, the immiscible solvent washed with a little distilled water and this wash water added to the acid solution. The acid solution is then made alkaline, in most cases with ammonia T.S., and then extracted with several successive portions of the appropriate immiscible solvent. The volume of the latter to be used in each operation is not less than half that of the aqueous solution, and this operation must be repeated

as long as any alkaloid is extracted by the immiscible solvent. To determine the completion of extraction, evaporate 1 cc. of the last washing and dissolve the residue in a few drops of diluted hydrochloric acid; the resulting solution should show no turbidity on the addition of a drop of mercuric potassium iodide T.S., or, in the case of caffeine and colchicine, on the addition of a drop of iodine T.S. The number of extractions required depends largely on the character of the alkaloid. With most alkaloids it is advisable to extract three or four times before testing. Physostigmine and pilocarpine require about twice as many extractions as other alkaloids.

Determination of Alkaloids.—An alkaloidal residue to be determined volumetrically should be softened by the addition of about 1 cc. of alcohol or ether made neutral to the indicator used in the titration, the required amount of standard acid added, and the mixture gently warmed to insure the complete solution of the alkaloid. If preferred, the alkaloidal residue may be dissolved in chloroform, the standard acid added and the chloroform removed by evaporation. Before titrating add a sufficient quantity of distilled water to make the volume of the mixture measure about 25 cc. When the residue is to be weighed, if the final solvent has been chloroform, the last traces of that solvent should be removed by the addition of a little ether or alcohol made neutral to the indicator used in the titration followed by evaporation. Care must be taken to avoid loss by decrepitation, especially when evaporating chloroformic solutions of nux vomica or cinchona alkaloids. Decrepitation may usually be prevented by the addition of a little alcohol made neutral to the indicator used in the titration after the solution has been reduced to a volume of 1 or 2 cc., evaporating at a low temperature, and rotating the container during the process.

Adsorbent.—In assaying fluidextracts, tinctures and other preparations of alkaloidal-bearing drugs, it is often necessary to evaporate these to dryness and, to avoid loss and to aid in the evaporation, they are usually added to some adsorbent material. Paper pulp or asbestos fibre should be used for this purpose. Such adsorbent material must be acid and alkali washed and then rendered neutral by washing with distilled water and dried before being used.

Indicators.—Methyl red T.S. is to be used as the indicator in volumetric estimations. The same lot of indicator used in titrating the alkaloids should also be used in evaluating the standard solutions.

Apparatus for Proximate Assays.—When a container of definite size and shape is recommended in a proximate assay process, it is understood that this is advisory and not obligatory, except when volumetric flasks, measuring burettes or other exact measuring apparatus are specified.

Aliquot Parts.—When using "aliquot parts," the solvent and the aliquot part should be measured at the same temperature. When handling volatile liquids, a lower temperature and a more quickly conducted operation reduces the loss from evaporation.

Emulsions.—The shaking or rotation of an aqueous solution with an immiscible solvent, in a separator, should ordinarily be continued for about one minute. Long or violent agitation should be avoided as emulsions are likely to form. Hyoscyamus, belladonna and stramonium leaves sometimes contain saponins which cause troublesome emulsions. Should emulsions prove persistent, draw off the emulsified portion and add an excess of either solvent. This usually breaks the emulsion and permits a complete separation. It is sometimes preferable to break the separated emulsion by the addition of a small amount of anhydrous sodium sulfate. If this is done it becomes necessary to wash the residue with additional solvent to completely remove the alkaloids.

Emulsification is sometimes prevented by increasing the volume of the aqueous or of the immiscible solvent. Chloroform or ether solutions of drugs which contain large proportions of fat may form troublesome emulsions. In such cases it is advisable to add sufficient normal sulfuric acid to assure acidity, and evaporate the volatile solvent, while stirring with a rubber-tipped glass rod. When the resinous and fatty matter has been agglutinated, cool the acid solution and filter it through a small, wetted filter into a separator. Redissolve the residue in 15 cc. of ether, add 5 cc. of tenth-normal acid, evaporate the ether as before, with continued stirring, and pour the acid solution through the filter into the separator. Repeat the extraction of the fatty residue with dilute acid two or three times and finally wash the filter free from alkaloids.

Washing.—The stems of separators and funnels and the lips of flasks, separators and graduates, from which volatile solvents containing alkaloids, have been drawn or poured, should be carefully washed with some of the solvent to prevent loss and to remove any of the alkaloids left by evaporation. These washings should be added to the other extractions.

MOISTURE DETERMINATION BY THE TOLUENE DISTILLATION METHOD.

The following method has been adopted for the determination of moisture in Asafetida and similar drugs:

Apparatus.—Use a 250- to 500-cc. flask of resistance glass, a 20-inch, sealed-in, straight-tube, Liebig condenser and a distilling tube receiver.

The condenser and receiving tube must be chemically clean to prevent an undue quantity of water from sticking to them. Clean them with chromic-sulfuric acid solution or similar oxidizing cleaner, rinse with distilled water, then with alcohol and dry in an oven.

Determination.—Place in the flask an accurately weighed amount of the drug to be tested, which it is estimated will yield from 2 to 4 cc. of water. If the drug is likely to cause bumping, add enough dry sand to cover the bottom of the flask. Add sufficient toluene to cover the drug completely, usually about 75 cc., and connect the apparatus. Fill the receiving tube with toluene by pouring it through the top of the condenser. Heat the toluene in the flask until it boils, and distil slowly, about two drops per second, until most of the water has passed over; then increase the rate of distillation to about four drops per second. When the water is apparently all over, wash down the condenser by pouring toluene in at the top, continuing the distillation a short time to ascertain whether any more water will distil and if it does, repeat the washing of the condenser with toluene. If any water remains in the condenser, remove it by brushing it down into the tube receiver with a tube brush attached to a copper wire and saturated with toluene, at the same time washing the condenser with toluene. Allow the receiving tube to stand until of room temperature and if any drops of water still adhere to the sides of the tube they can be forced down by a rubber band wrapped around a copper wire. Finally read the volume of water and calculate to determine the percentage.

Assay of Asafetida.—To yield not less than 50 per cent of alcohol-soluble extractive.

Place about 2 Gm. of Asafetida, accurately weighed, in a tared extraction thimble and extract with alcohol in a Soxhlet apparatus or other suitable extraction apparatus for three hours or until completely extracted. Dry the insoluble residue at 100° C. for thirty minutes and weigh. Determine the amount of moisture in the drug by the toluene distillation method, calculate the weight of moisture in the Asafetida and subtract this weight of moisture from the original weight of the Asafetida taken for the assay. The difference between this result and the weight of the residue determined above represents the alcohol-soluble extractive.

Assay of Aloe.—This drug has received a great deal of careful study, both from the chemical assay and from the physiological effect on daphnia. However, no satisfactory method has yet been devised for assaying this drug.

Assay of Aspidium.—Prepare an ethereal extract as directed under Oleoresin of Aspidium, using 125 Gm. of the drug. Assay as directed under Oleoresin of Aspidium. Aspidium yields not less than 6.5 per cent of oleoresin and not less than 1.5 per cent of crude filicin.

Assay of Oleoresin of Aspidium.—Warm the Oleoresin on a water-bath and stir until it is thoroughly mixed. Transfer about 3 Gm. of it, accurately weighed, to a 250-cc. flask, dissolve it in 40 cc. of ether, add 75 cc. of a 3 per cent aqueous solution of barium hydroxide, and shake the mixture vigorously for five minutes. Transfer the mixture to a separator, allow the liquids to completely separate, and draw off and filter the barium hydroxide layer. Rinse the 250-cc. flask with two 25-cc. portions of a 3 per cent aqueous barium hydroxide solution. After each rinsing, transfer the barium hydroxide solution to the separator, shake the mixture for one minute, allow the liquids to separate completely and draw off and filter the barium hydroxide layer. Transfer the combined filtered barium hydroxide solutions to a separator, render distinctly acid to litmus paper by the addition of hydrochloric acid, and extract with three successive portions of 30 cc., 20 cc. and 15 cc. of ether. Filter the combined ethereal solutions, wash the filter with ether, evaporate and dry the residue to constant weight at 100° C. This residue is calculated as crude filicin and its weight should be not less than 24 per cent of the weight of Oleoresin taken for the assay.

Assay of Belladonna Leaves.—Proceed as directed under Assay of Hyoscyamus.

Assay of Extract of Belladonna Leaves.—A. Pilular.—Proceed as directed under Assay of Pilular Extract of Hyoscyamus. B. Powdered.—Proceed as directed under Assay of Powdered Extract of Hyoscyamus.

Assay of Tincture of Belladonna.—Proceed as directed under Assay of Tincture of Hyoscyamus, with slight modifications.

Assay of Belladonna Root.—Proceed as directed under Assay of Hyoscyamus.

Assay of Fluidextract of Belladonna Root.—To 10 cc. of fluidextract of belladonna root add 10 cc. of approximately tenth-normal acid and 10 cc. of distilled water and evaporate on a water-bath to about 10 cc. Then add 10 cc. of distilled water and proceed as directed under Assay of Hyoscyamus, beginning with the words "filter this mixture."

Assay and Standard of Belladonna Ointment.—Ointment of Belladonna yields not less than 0.118 per cent and not more than 0.132 per cent of the alkaloids of belladonna leaves.

Assay. Accurately weigh about 25 Gm. of the well-mixed Ointment and transfer it completely to a 250-cc. separator having a pledget of purified cotton packed loosely in the stem. Add 100 cc. of ether-chloroform mixture (ether, four parts and chloroform, one part) and shake the mixture vigorously until all of the fats have been dissolved. Extract the alkaloids from the mixture with five successive 20-cc. portions of 2 per cent sulfuric acid. Draw off each portion of the clear acid solution into a small separator containing 10 cc. of ether. Wash each acid-extraction successively through this same 10 cc. of ether and draw off the acid solutions into another 250-cc. separator. Render the combined acidified solutions alkaline with ammonia T.S. and extract the alkaloids completely by shaking out with successive, 25-cc. portions of chloroform, testing for complete extraction as directed under *Proximate Assays.* Allow each portion to settle, and then filter through purified cotton, wetted with chloroform, into a 250-cc. beaker, finally washing the stem of the separator and the filter with a little chloroform. Evaporate the chloroform from the combined solutions by warming at a moderate heat on a water-bath until it is reduced to a volume of about 10 cc. Add a measured excess (about 10 cc.) of fiftieth-normal sulfuric acid, stir the mixture, and continue the evaporation until all of the chloroform has been expelled. Add 20 cc. of recently boiled and cooled distilled water and one drop of methyl red T.S. and titrate the excess of acid with fiftieth-normal sodium hydroxide. Each cc. of fiftieth-normal sulfuric acid is equivalent to 0.00578 Gm. of the alkaloids of belladonna leaves.

Assay of Belladonna Plaster.—Belladonna Plaster is a mixture of adhesive plaster mass and an extract prepared from belladonna root, spread evenly upon fine cotton cloth or other suitable backing material. The plaster mass yields not less than 0.25 per cent and not more than 0.30 per cent of the alkaloids of belladonna.

Each 100 square centimeters of the spread plaster contains at least 2.5 Gm. of the belladonna plaster mass.

Assay. Same as in U. S. P. X except for the following changes: An extra washing of the cloth and beaker, the precipitated rubber is kneaded with a glass rod to force out any chloroform-alcohol solution, the cotton pledget is pressed to remove the rest of the solvent, the residue is dissolved in 5 cc. of chloroform made neutral to methyl red T.S., 10 cc. of fiftieth-normal acid added and the chloroform evaporated on a water-bath and then the excess of acid titrated with a fiftieth-normal alkali.

Assay of Benzoinum.—

Assay. Place about 2 Gm. of Benzoin, accurately weighed, in a tared extraction thimble and extract with alcohol, containing 0.5 per cent of sodium hydroxide, in a Soxhlet apparatus or other suitable extraction apparatus for five hours, or until completely extracted. Dry the insoluble residue at 100° C. for thirty minutes and weigh. Determine the amount of moisture in the drug by the toluene distillation method, calculate the weight of moisture in the Benzoin and subtract this weight of moisture from the original weight of the Benzoin taken for the assay. The difference between this result and the weight of the residue determined above represents the alcohol-soluble extractive.

Assay of Cinchona.—Place 5 Gm. of Cinchona, in "fine powder," and 15 cc. of 3 per cent hydrochloric acid in a 500-cc. flask and heat the mixture on a water-bath for one hour. Cool and add 200 cc. of ether-chloroform solution (ether, 4 volumes, chloroform, 1 volume) and 10 cc. of stronger ammonia T.S. Stopper the flask tightly and shake it for one hour in a mechanical shaker. Allow the mixture to stand over night, again shake it for one-half hour, and then allow the drug to settle. (If the supernatant liquid is not clear, add a few cc. of distilled water, again shake the contents of the flask vigorously and allow the drug to settle.)

Quickly decant 160 cc. of the clear, ether-chloroform solution, measured at approximately

the same temperature as the original menstruum and representing 4 Gm. of the drug. Transfer the solution to a separator, rinse the measuring vessel with a small quantity of the ether-chloroform solution and add the rinsings to the separator. Completely extract the alkaloids with approximately 5 per cent sulfuric acid and collect the acid solution of the alkaloids in a second separator.

Make the acid solution strongly alkaline with ammonia T.S. and completely extract the alkaloids with chloroform. Evaporate or distil the chloroform in a tared beaker or flask and dry the alkaloidal residue to constant weight at 100° C. The weight obtained, multiplied by 25, represents the per cent of the alkaloids of cinchona in the drug.

Assay of Compound Tincture of Cinchona.—Evaporate 50 cc., accurately measured, of Compound Tincture of Cinchona, to about 10 cc. at a temperature not exceeding 100° C. Add sufficient asbestos fiber or paper pulp to absorb the liquid and continue the evaporation to dryness. Transfer the residue to a flask or bottle, add 200 cc., accurately measured and at room temperature, of ether-chloroform mixture (ether 4 volumes, chloroform 1 volume) and sufficient ammonia T.S. (which may be used to rinse out the adhering portions of the Tincture from the evaporating dish) to render the mixture strongly alkaline. Securely stopper the container and shake it mechanically during one hour, or intermittently during two hours and then allow the mixture to stand over night. Again shake the mixture intermittently for half an hour; allow it to settle; quickly decant 160 cc. (representing 40 cc. of the Tincture) of the approximately clear liquid. Filter this into a separator and wash the measuring vessel with sufficient of the original menstruum, adding the rinsings to the separator. Extract the alkaloids from the clear liquid with acidulated water, using sufficient dilute sulfuric acid to render the contents of the separatory funnel and each extract distinctly acid to litmus paper. Pass the acid extracts in succession through a wetted, double filter into a second separator. Render the combined liquids distinctly alkaline with stronger ammonia T.S. and extract with chloroform. Pass the chloroformic extracts through a double filter, which is kept saturated with chloroform, into a suitable, tared receptacle. Evaporate the chloroform on a water-bath, dry the residue to constant weight at 100° C. and weigh. The weight multiplied by 2.5 represents the weight of alkaloids in 100 cc. of the Compound Tincture of Cinchona.

Assay of Colchicum Seed.—U. S. P. X process is continued with only minor changes in the wording.

Assay of Ginger and Fluidextract of Ginger.—The standards and assays are as follows:

Ginger contains not less than 4.5 per cent of ether-soluble extractive.

Assay. Place 20 Gm. of Ginger, in moderately coarse powder, in an extraction thimble in a Soxhlet or similar extractor. Extract with ether for six hours, evaporate the liquid on a water-bath until the odor of ether is no longer perceptible, and place the container in a desiccator for twelve hours or over night and then weigh. The weight of the extract should be not less than 0.90 Gm.

Only Jamaica Ginger will be recognized in the forthcoming pharmacopœia.

Fluidextract of Ginger contains, in each 100 cc., not less than 4.5 Gm. of ether-soluble extractive.

Assay. Place 20 cc. of Fluidextract of Ginger in a 200-cc. beaker. Place this on a water-bath and evaporate the liquid until there is no longer any odor of alcohol. Remove it from the bath and add 50 cc. of ether. Stir the contents of the beaker with a stirring rod to dissolve the soluble resin and decant the ether through a dry, 9-cm. filter into a tared 200-cc. beaker. Repeat the extraction two or three times, using 50-cc. portions of ether. Finally wash the filter with a small amount of ether and evaporate the combined ethereal extractions on a water-bath until the odor of ether is no longer perceptible. Place the container in a desiccator for twelve hours or over night and then weigh. The weight of residue shall not be less than 0.90 Gm.

Assay of Hyoscyamus.—To yield not less than 0.040 per cent of the alkaloids of hyoscyamus by the new assay. The U. S. P. X assay gave a larger yield but the substance estimated was not all alkaloidal.

As indicated above it was necessary to change the assay process of this drug because of the volatile amines present and this assay process is made the basis for the assay of all mydriatic drugs and their preparations. The process is as follows:

Place 25 Gm. of Hyoscyamus, in fine powder, in an extraction thimble, insert the thimble

in a Soxhlet extractor, moisten the drug with a mixture of 8 cc. of stronger ammonia T.S., 10 cc. of alcohol and 20 cc. of ether and mix thoroughly. Macerate the mixture over night, then extract it for not less than three hours, on a water bath, using ether as the solvent. The following alternative process may be used: Moisten 25 Gm. of Hyoscyamus, in fine powder, with a mixture of 8 cc. of stronger ammonia T.S., 20 cc. of ether and 10 cc. of chloroform, in a small percolator, previously prepared by packing the outlet with a pledget of purified cotton. Macerate the mixture over night, pack it in the percolator and extract the drug by slowly percolating with a mixture of 3 parts of ether and 1 part of chloroform. Continue the percolation until the 3 or 4 cc. of percolate last passed, when evaporated to dryness and the residue dissolved in dilute sulfuric acid, fails to become turbid when treated with mercuric potassium iodide T.S. Evaporate the extractive, obtained by either method, to about 15 cc., then add 10 cc. of approximately tenth-normal sulfuric acid and 10 cc. of distilled water and continue the evaporation until the volatile solvents are removed. Filter this mixture, collecting the filtrate in a separator, dissolve the chlorophyll residue in chloroform, add acidulated water, evaporate on a water-bath until the chloroform is removed and filter into the same separator through the filter previously used. Render the mixed filtrates alkaline with ammonia T.S. and remove the alkaloids by extracting with chloroform, testing for the complete extraction of the alkaloids. Evaporate or distil the chloroform from the combined extractions until reduced to a small volume, then evaporate to dryness on a water-bath and keep at this temperature for fifteen minutes. Dissolve the residue in chloroform, evaporate to dryness on a water-bath and continue the heating for fifteen minutes. Repeat this treatment for the third time. Dissolve the resulting residue in chloroform, add 15 cc. of fiftieth-normal sulfuric acid, remove the chloroform by evaporation and titrate the excess acid with fiftieth-normal sodium hydroxide, using methyl red T.S. as the indicator. Each cc. of fiftieth-normal acid is equivalent to 0.00578 Gm. of the alkaloids of Hyoscyamus.

Assay of Pilular Extract of Hyoscyamus.—To yield not less than 0.135 per cent and not more than 0.175 per cent of the alkaloids of hyoscyamus.

Dissolve approximately 5 Gm. of Pilular Extract of Hyoscyamus, accurately weighed (see Proximate Assays, for method of weighing), in 10 cc. of chloroform, add 10 cc. of approximately tenth-normal sulfuric acid and 10 cc. of distilled water and evaporate the mixture on a water-bath until the chloroform is removed. Complete the assay as directed under *Hyoscyamus*, beginning with the words "Filter this mixture, collecting the filtrate in a separator." Each cc. of fiftieth-normal acid is equivalent to 0.00578 Gm. of the alkaloids of hyoscyamus.

Assay of Powdered Extract of Hyoscyamus.—To yield not less than 0.135 per cent and not more than 0.175 per cent of the alkaloids of hyoscyamus.

Dissolve 5 Gm. of Powdered Extract of Hyoscyamus in 10 cc. of chloroform, add 10 cc. of approximately tenth-normal sulfuric acid and 10 cc. of distilled water and evaporate the mixture on a water-bath, until the chloroform is removed. Complete the assay as directed under *Hyoscyamus*, beginning with the words "Filter this mixture, collecting the filtrate in a separator." Each cc. of fiftieth-normal acid is equivalent to 0.00578 Gm. of the alkaloids of hyoscyamus.

Assay of Tincture of Hyoscyamus.—Each 100 cc. to yield not less than 0.0034 Gm. and not more than 0.0046 Gm. of the alkaloid of hyoscyamus.

Evaporate approximately 250 cc., accurately measured, of Tincture of Hyoscyamus, at a temperature not exceeding 80° C., to about 25 cc. Add 10 cc. of approximately tenth-normal sulfuric acid and 10 cc. of distilled water and complete the assay as directed under *Hyoscyamus*, beginning with the words "Filter this mixture, collecting the filtrate in a separator."

Each cc. of fiftieth-normal acid is equivalent to 0.00578 Gm. of alkaloids of Hyoscyamus.

Assay of Ipecac.—Place 10 Gm. of Ipecac in "fine powder" in a dry, 250-cc. flask. Add 100 cc. of ether, which is free from peroxide, stopper the flask, shake the mixture thoroughly and allow it to stand for five minutes; then add 10 cc. of ammonia T.S. Again stopper the flask tightly and shake it for one hour in a mechanical shaker, or intermittently during two hours. Allow the mixture to stand over night, again shake it intermittently during one-half hour and then allow the drug to settle. Decant into a separator 50 cc., accurately measured, of the clear, supernatant liquid (representing 5 Gm. of drug), and rinse the vessel with a small quantity of ether.

Completely extract the alkaloids from this ethereal solution with approximately normal sulfuric acid, preferably using 15 cc. the first time and 10 cc. on each succeeding extraction, and

filtering each portion into a second separator. Continue the extraction until no reaction can be detected in the sulfuric acid solution when tested as directed in the General Article on Proximate Assays.

To the combined acid solutions add about an equal volume of peroxide-free ether, render the mixture alkaline by the addition of ammonia T.S. and extract with successive portions of the ether until no visible reaction takes place when tested as directed above. Filter each portion of the ethereal extract into a 200-cc. flask or beaker and carefully evaporate the combined ethereal solutions on a steam-bath, until nearly but not quite dry. Add 5 cc. of the peroxide-free ether and again evaporate nearly to dryness. Add 10 cc. of tenth-normal sulfuric acid and heat on a steam-bath to effect complete solution and to remove all of the ether. Cool and titrate the excess of acid with tenth-normal sodium hydroxide, using methyl red T.S. as the indicator. Each cc. of tenth-normal sulfuric acid is equivalent to 0.0240 Gm. of the ether-soluble alkaloids of Ipecac.

Assay of Fluidextract of Ipecac.—Each 100 cc. to yield not less than 1.55 Gm. and not more than 1.90 Gm. of the ether-soluble alkaloids of ipecac.

Transfer 10 cc. of Fluidextract of Ipecac, accurately measured, to an evaporating dish containing either absorbent paper or asbestos and dry at a temperature not exceeding 60° C. Transfer the absorbent to a flask containing 100 cc. of peroxide-free ether, stopper the flask, shake well and allow the mixture to stand for five minutes. Then add 10 cc. of ammonia T.S. using a portion of the ammonia T.S. to rinse traces of the absorbent from the evaporating dish. Stopper the flask tightly and shake the mixture during one hour in a mechanical shaker, or, occasionally, by hand, during a period of about two hours. Allow the mixture to stand over night and again shake it occasionally during a one-hour period. Allow the absorbent to settle and decant exactly 50 cc. (representing 5 cc. of the Fluidextract) of the clear supernatant liquid into a separator. Completely extract the alkaloids from the ethereal solution with approximately normal sulfuric acid, filtering each portion into a second separator and test for complete extraction as directed under Proximate Assays. Render the combined acid solution alkaline with ammonia T.S., extract with successive portions of peroxide-free ether and again test for complete extraction. Filter the ethereal extracts into a flask or beaker and evaporate them carefully on a steam-bath, nearly, but not quite, to dryness. Add 5 cc. of ether and again evaporate nearly to dryness. Add 10 cc. of tenth-normal sulfuric acid and heat on a steam-bath to effect complete solution and to remove all of the ether. Cool, and titrate the excess of acid with tenth-normal sodium hydroxide, using methyl red T.S. as the indicator. Each cc. of tenth-normal sulfuric acid is equivalent to 0.0240 Gm. of the ether-soluble alkaloids of ipecac.

Assay of Nux Vomica.—To yield not less than 1.15 per cent of strychnine.

Place 15 Gm. of Nux Vomica, in coarse powder, in a flask or bottle, add 150 cc. of a mixture of 3 volumes of ether and 1 volume of chloroform, agitate the mixture and allow it to stand for about two minutes. Then add 10 cc. of stronger ammonia T.S., agitate thoroughly, stopper the container securely and shake frequently, but gently, during one hour. Now allow the mixture to stand for twelve hours or over night in a cool place. At the expiration of this period, shake the container gently for fifteen minutes, and then allow it to separate. Decant 100 cc. of the liquid (representing 10 Gm. of Nux Vomica), and transfer it to a separator, rinsing the container with a little chloroform and adding the rinsings to the separator. Now add about 40 cc. of approximately normal sulfuric acid to the separator and shake the mixture gently for five minutes, then allow the liquids to separate and draw off the acid layer into another separator and repeat with successive portions of the acid, until the drug is completely extracted. (Test for the complete extraction of the alkaloids.)

To the combined acid solutions in the separator, add a small piece of red litmus paper and 50 cc. of chloroform, and follow with sufficient ammonia T.S. to render the aqueous layer alkaline and, after gently shaking, add 2 or 3 cc. more of the ammonia T.S. Now shake the mixture thoroughly, but gently, for about ten minutes, and allow the liquids to separate. Draw off the chloroform into a container and repeat, with additional portions of chloroform, until all of the alkaloid is extracted.

Carefully evaporate the combined chloroformic extracts to dryness on a steam-bath, dissolve the residue by warming with 15 cc. of approximately 3 per cent sulfuric acid, cool and then add 3 cc. of a mixture of equal parts of nitric acid and a 5 per cent solution of sodium nitrite

in distilled water, stir well and allow to stand for exactly ten minutes at room temperature. At the expiration of this period, pour the red solution into a separator containing 50 cc. of chloroform, rinse the flask with distilled water and add the rinsings to the separator. Now immediately add sufficient 10 per cent sodium hydroxide solution to make the contents of the separator distinctly alkaline to litmus paper, and then add a few cc. more of the hydroxide solution. Shake the mixture gently for ten minutes and allow the liquids to separate. Draw off the chloroformic layer into another separator and repeat the shaking out with additional portions of chloroform until the alkaloids are completely extracted. Add 10 cc. of distilled water to the combined chloroformic extract, shake the mixture gently and add a small piece of red litmus paper. The litmus paper should indicate not more than a slight alkalinity. Draw off the chloroform, passing it through a filter paper, moistened with chloroform, into a container. Shake the residual water with 5 cc. more of chloroform, separate this chloroform and add it to that previously separated. Wash the filter paper with warm chloroform and add it also to the container. If the water, after shaking with the chloroform, is strongly alkaline, draw off the chloroform into another separator and shake it with another 10 cc. of distilled water. Now shake out the combined water extract with 5 cc. of chloroform and draw off all of the chloroform through a chloroform-moistened filter paper as before.

Evaporate the combined chloroform very carefully on a steam-bath nearly, but not quite, to dryness. Add to the moist residue 6 cc. of tenth-normal sulfuric acid and follow by 30 cc. of distilled water. Heat the mixture on a steam-bath until the alkaloid is dissolved and the odor of chloroform is dissipated. Cool to room temperature and titrate the excess of acid with tenth-normal sodium hydroxide, using one drop of methyl red T.S. as the indicator. Each cc. of tenth-normal sulfuric acid is equivalent to 0.03342 Gm. of strychnine.

Assay of Extract of Nux Vomica.—To yield not less than 7.0 per cent and not more than 7.75 per cent of strychnine.

Place about 1.5 Gm. of Extract of Nux Vomica, accurately weighed, in a dish and digest it on a water-bath with about 10 cc. of diluted alcohol, acidulated with acetic acid, until the extract has liquefied. Transfer the solution to a separator containing 25 cc. of chloroform and wash the dish with successive small portions of diluted alcohol, adding the rinsings to the separator. Dilute the alcoholic liquid with an equal amount of distilled water, render it alkaline with ammonia T.S., and completely extract the alkaloids with successive portions of chloroform. Then proceed as directed under the *Assay for Nux Vomica*, beginning with the words "Carefully evaporate the combined chloroform extracts." Each cc. of tenth-normal sulfuric acid is equivalent to 0.03342 Gm. of strychnine.

Assay of Tincture of Nux Vomica.—Concentrate 100 cc. of Tincture of Nux Vomica to about 10 to 20 cc. by evaporating it at a temperature not exceeding 60° C. Transfer the concentrated liquid to a separator containing 25 cc. of chloroform and rinse all traces of liquid from the dish, using small portions of diluted alcohol and adding the rinsing to the separator. Add a volume of distilled water equal to that of the alcoholic liquid, render the solution alkaline with ammonia T.S. and completely extract the alkaloids by shaking out with successive portions of chloroform. Then proceed as directed under the Assay for Nux Vomica beginning with the words "Carefully evaporate the combined chloroform extracts," etc.

The number of cc. of tenth-normal sulfuric acid consumed, multiplied by 0.03342, indicates in grams, the amount of strychnine in 100 cc. of the Tincture.

Assay of Opium, Granulated Opium and Powdered Opium.—This is essentially the U. S. P. X assay process except that the morphine crystals are washed with "morphinated" water instead of distilled water.

Assay of Tincture of Opium.—Essentially the same as the U. S. P. X assay process except as indicated above in the Assay of Opium.

Assay of Camphorated Tincture of Opium.—This is the first time that an assay process has been included in the U. S. P. for this preparation. The process is as follows:

Each 100 cc. to yield not less than 0.035 Gm. and not more than 0.045 Gm. of anhydrous morphine.

To 100 cc. of the Tincture add 2 cc. of approximately normal sulfuric acid, evaporate the mixture on a water-bath to about 10 cc. and transfer the residue to a separator. Wash the evaporating dish with portions of about 10 cc. of a mixture of equal volumes of normal sulfuric

acid and distilled water, and add the washings to the separator. If necessary, wash the dish with several cc. of a mixture of 85 volumes of chloroform and 15 volumes of alcohol, adding these washings to the liquid in the separator. To this mixture add about 9 Gm. of sodium chloride and carefully neutralize to litmus paper by adding stronger ammonia water, and then add several drops in excess. Add 130 cc. of a mixture of 85 volumes of chloroform and 15 volumes of alcohol, shake the contents of the separator and then allow the mixture to completely separate.

Transfer the immiscible solvent portion to a second separator and extract the remaining aqueous solution with successive portions of the chloroform-alcohol mixture until a negative test for morphine is obtained with sulfuric acid formaldehyde T.S. Collect the extractions in the second separator. If more than four extractions are required, increase the quantities and volumes of all subsequent reagents so as to maintain the proportions here prescribed.

Dissolve 25 Gm. of sodium hydroxide in 1000 cc. of distilled water, saturate the solution with sodium chloride, filter and add 15 cc. of this alkaline salt solution to the chloroformic-alcohol extract just prepared. Remove the morphine by shaking with several successive portions of alkaline salt solution, collecting the latter. Wash the combined alkaline salt solutions with 10 cc. of chloroform and discard the chloroform. Exactly neutralize the alkaline salt solution to litmus paper by adding hydrochloric acid, and finally add a slight excess of acid. Cool the solution to 25° C., shake it with 10 cc. of chloroform. Remove the chloroform to another separator and shake it with 5 cc. of saturated sodium chloride solution to which a few drops of hydrochloric acid have been added. Discard the chloroform and add the acid salt solution to the combined salt solutions.

Now add stronger ammonia T.S. to the combined salt solutions until it is neutral to litmus paper, and then add a slight excess of the ammonia. Cool the solution to 25° C. and immediately extract the alkaloids with successive portions of the chloroform-alcohol mixture. Filter each extraction into a container, through purified cotton wetted with the chloroform-alcohol mixture and, when completely extracted, discard the liquid in the separator.

Evaporate the combined chloroformic solutions on a water-bath to a volume between 1 cc. and 1.5 cc. Add 10 cc. of alcohol neutral to methyl red T.S. to the residue and warm the mixture to dissolve the alkaloids and to remove the last traces of chloroform. Add 1 drop of methyl red T.S. and then a measured excess of fiftieth-normal sulfuric acid. *Guard against the presence of undissolved particles.* Cool and add 15 to 20 cc. of recently boiled and cooled distilled water. Titrate the excess of acid with fiftieth-normal sodium hydroxide which is sufficiently free from carbonate to insure a sharp end-point with methyl red T.S. as the indicator. Each cc. of fiftieth-normal sulfuric acid corresponds to 0.00571 Gm. of anhydrous morphine.

Assay of Podophyllym.—Considerable study was given to the assay process of podophyllum and the following process is recommended:

To yield not less than 4 per cent of resin of podophyllum.

Place 10 Gm. of Podophyllum, in fine powder, in a 125-cc. Erlenmeyer flask and add 35 cc. of alcohol. Fit a stopper with a glass tube for refluxing (a reflux condenser may be substituted) and heat on a water-bath for three hours. Transfer the mixture to a small percolator and percolate slowly with warm alcohol until the percolate measures 95 cc. Cool, add sufficient alcohol to make the volume exactly 100 cc. and mix thoroughly.

Transfer 10 cc. of this percolate to a separator, and add 10 cc. of chloroform and 10 cc of 0.6 per cent hydrochloric acid. Shake the mixture, allow it to separate, draw off the alcohol-chloroform layer into a second separator, and then wash the acid layer three times with successive, 15-cc. portions, of an alcohol-chloroform mixture prepared from one volume alcohol and two volumes of chloroform, adding the washings to the second separator. Add 10 cc. of 0.6 per cent hydrochloric acid to the combined extracts and washings, again shake the mixture, allow it to separate and draw off the alcohol-chloroform layer into a tared vessel. Wash the acid layer three times with 15-cc. portions of the alcohol-chloroform mixture, adding the washings to the tared vessel. Evaporate the combined extractions on a water-bath to apparent dryness, add 1 cc. of dehydrated alcohol and again evaporate to dryness and then to constant weight at 80° C. The weight of this residue, multiplied by 100, indicates the per cent of resin in the drug.

Assay of Stramonium.—To yield not less than 0.30 per cent of the alkaloids of stramonium.

Proceed as directed under Assay of Hyoscyamus.

Assay of Extract of Stramonium.—To yield not less than 1.10 per cent and not more than 1.30 per cent of alkaloids of stramonium.

Pilular. Proceed as directed under Assay of Pilular Extract of Hyoscyamus.

Powdered. Proceed as directed under Assay of Powdered Extract of Hyoscyamus.

Assay of Tincture of Stramonium.—Each 100 cc. to yield not less than 0.027 Gm. and not more than 0.033 Gm. of alkaloids of stramonium.

Proceed as directed under Assay of Tincture of Hyoscyamus.

A CORRECTION.

An error was made in transcribing the notes on our calomel article, JOUR. A. PH. A., 24, 97–102 (1935).

On pages 101 and 102 wherever the μ sign is used, it should read 1/1000 inch.

Will you please make this correction some time this year so that the correction will appear in the same volume as the article?

(Signed) CHARLES H. LAWALL.

CANCER RESEARCH.

Report was made at the American Chemical Society meeting in San Francisco, of apparent success in treating cancer by means of lead phosphate administration to a degree producing lead intoxication.

BLINDNESS CAUSED BY USE OF DINITROPHENOL.

W. G. Campbell, Chief of the Food and Drug Administration, has issued a Bulletin on the above subject. The statement is made that eye cataracts observed in dinitrophenol poisoning develop with rapidity and result in total blindness within a comparatively short time. The symptoms of the poisoning are nausea, stomach and intestine disturbance, high fever, rapid breathing and muscular rigor, followed by death.

Mr. Campbell states that the cases of progressive blindness recently reported in California are the result of medication with dinitrophenol. The statement is also made that dinitrophenol is sold under fanciful names and the statement is made that if the preparation contains the drugs it may not be known to the seller nor to the buyer. Purchaser should be advised regarding the dangers which follow the use of the drug.

BANG'S DISEASE IN CATTLE.

Testing to eradicate Bang's Disease in cattle is under way in nearly all states. The work is conducted by the Bureau of Animal Industry. A total of 250 herds showed one or more reactors and retesting is now under way.

PHARMACOLOGICAL AND VITAMIN LABORATORY.

Dr. Walter G. Campbell, chief of the Food and Drug Administration, has stated that the work of the Pharmacological and Vitamin Laboratory will be expanded. The work will include bioassay and other drug studies, investigation of the toxic effects of fruit-spray residues and examination of food and drug vitamin products.

MORPHINE ADDICTION.

Drs. O. H. Plant and D. Slaughter, of the State University of Iowa, reported to the American Society for Pharmacology and Experimental Therapeutics that the development of tolerance is one of the tests for judging the morphine substitutes. Dinitrophenol stimulates oxidation, the process by which the body burns food or other fuel to get energy; it increased the burning of morphine in the bodies of dogs that had no tolerance for the latter drug. In morphine-tolerant dogs, the general burning of oxidation process was speeded up by dinitrophenol, but judging from the fact that there was no decrease in the amount of morphine excreted, it appears that the burning of morphine itself was not affected by dinitrophenol in tolerant dogs. Consequently the investigators assume that the dog's body handles morphine differently when it has become used to the narcotic.

BRITISH PHYSICIANS VISIT UNITED STATES.

Fifty-five British physicians, with members of their families making a group of 110, visited New York, Washington, Chicago, Albuquerque, the Grand Canyon, Los Angeles and San Francisco between August 4th and 14th, on their way to the annual session of the British Medical Association in Melbourne, Australia, in September.

EDITORIAL NOTES

PLEASE NOTE.

Owing to the large number of Addresses, Council Business and Reports, the Editorial Notes and matter usually following have been omitted. The lateness in receiving some of them and the fact that the September issue of the JOURNAL will soon be completed, these pages will be included in that issue. For Roster of Associations, Boards, etc.—see July JOURNAL.

NOMINEES FOR A. PH. A. OFFICERS, 1936–1937.

For *President*, George D. Beal, Pittsburgh, Pa.; John Culley, San Francisco, Calif.; E. Fullerton Cook, Philadelphia, Pa. For *First Vice-President*, W. J. Husa, Gainesville, Fla.; J. Leon Lascoff, New York, N. Y.; H. W. Youngken, Boston, Mass. For *Second Vice-President*, A. O. Mickelsen, Portland, Ore.; E. R. Serles, Brookings, S. D.; James C. Munch, Philadelphia, Pa.

Three will be elected from the following nine nominees for places on the Council; W. D. Adams, Forney, Tex.; F. E. Bibbins, Indianapolis, Ind.; W. Mac Childs, Topeka, Kan.; H. C. Christensen, Chicago, Ill.; C. J. Clayton, Denver, Colo.; C. H. Evans, Warrenton, Ga.; R. P. Fischelis, Trenton, N. J.; Ernest Little, Newark, N. J.; A. L. I. Winne, Richmond, Va.

NATIONAL PHARMACY WEEK.

National Pharmacy Week will be held during the week of October 21st, the change of date is made largely in order to give colleges of pharmacy time in which to prepare for the annual event. Honorable mention certificates and prizes will be offered for window displays. The Washington, D. C., Wholesale Drug Exchange has announced a prize of a balance and honorable mention certificates will be offered by the National Association of Retail Druggists and the AMERICAN PHARMACEUTICAL ASSOCIATION.

We have had a number of inquiries regarding Pharmacy Week maps from private and public schools and are advised that Secretary E. L. Newcomb of the N. W. D. A. still has a number of these maps; pharmacists should make application from their wholesale druggists.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission has announced an open competitive examination for Associate Electrochemist. Applications for the position of associate electrochemist must be on file with the U. S. Civil Service Commission, Washington, D. C., not later than September 16, 1935. At present there is a vacancy in this position in the Bureau of Chemistry and Soils, Department of Agriculture.

The entrance salary is $3200.00 a year, less a deduction of $3\frac{1}{2}$ per cent toward a retirement annuity.

Applicants must have been graduated with a bachelor's degree from a college or university of recognized standing upon the completion of at least 118 semester hours, of which at least 30 semester hours must have been in chemistry. In addition, they must have had at least three years' experience, acquired since graduation, of a progressive specialized technical character in electrochemical manufacturing plants, preferably in the production of chlorine, chlorates or persulphates. Such experience must have necessitated a thorough knowledge of electrochemistry and must have involved familiarity with and responsibility for plant operation and production costs. The major portion of the experience must have been obtained within the 10 years immediately preceding the date of the close of receipt of applications.

Full information may be obtained from the secretary of the United States Civil Service Board of Examiners at the post-office or custom-house in any city which has a post-office of the first or the second class, or from the United States Civil Service Commission, Washington, D. C.

INTERNATIONAL CONGRESS OF PHARMACY.

The Twelfth International Congress of Pharmacy was held in Brussels during the week of July 29th. M. Pattou, President of the National Pharmaceutical Society of Belgium, and also the Congress, presided at the meeting and the opening ceremonies were attended by the King and Queen of Belgium. There were also present the French and Bra-

zilian Ambassadors and dignitaries from a number of countries.

President Pattou explained the objects of the Conference and spoke of Pharmacy as a profession, possessing equal rank with the other learned professions of the world.

Dr. J. Brueugelmans gave a history of the Conference and referred to the participating countries in the organizations represented, and that the reports of the Conference should be printed in the respective publications.

A meeting was held for the discussion of the International Pharmacopœias, at which time papers were read by the participants of the Congress, among these a report was made by Prof. Oscar Van Schoor, secretary of the International Pharmacopœia Commission.

Following a discussion it was decided that the League of Nations would be asked to establish a commission for the production of an International Pharmacopœia and that the meetings of the Commission be held in Brussels. A general opinion prevailed that the first International Pharmacopœia should be limited to a description of certain reagents and methods of analysis on which the participants are in agreement. Discussions were also held and other discussions dealt with army pharmaceutical service.

PERSONAL AND NEWS ITEMS.

Dr. Marshall A. Howe was appointed director of the New York Botanical Gardens, succeeding Dr. Elmer D. Merrill.

The Ebert award, a gold medal, was presented to Marvin J. Andrews, of the faculty at the University of Maryland, for a "meritorious scientific research paper"—"Determination of the Reasonable Permissible Margin of Error in Dispensing," at the annual convention in Portland, Oregon, of the AMERICAN PHARMACEUTICAL ASSOCIATION.

H. C. Christensen, of Chicago, was given a plaque in recognition of his services in handling exhibits at the Chicago World's Fair.

The bulletin of **W. Bruce Philip** for August 9th gives available information relative to weighing and measuring, the purpose being to insure accuracy in prescription practice.

William A. Noyes, *emeritus director* of the laboratories of the University of Illinois, received the Priestley medal, highest award of the American Chemical Society, at the general session of the meeting of the society, August 19th, in San Francisco. The subject of his medalist address was "The Way Forward in Chemistry."

F. W. Meissner, La Porte, Ind., had his 50th display at the La Porte County Fair. His booth on this occasion was decorated in gold trimming.

Hon. Frank J. Kobelak, of the Pennsylvania Legislature, whose fair trade bill was signed by Governor Earle, is a druggist of Pittsburgh.

An organization has been formed for the study of problems associated with phenolphthalein; the research activities will be under direction of **Dr. Bernard Fantus,** assisted by a research staff at the University of Illinois.

The memorial of the late Dr. F. B. Kilmer will be perpetuated by a Memorial Garden being planned by the Philadelphia College of Pharmacy and Science east of the college building.

Frederick G. Zinser was born in New York, N. Y., March 20, 1868, received his primary education in the public schools of New York, N. Y., after which he attended Columbia University, from which he graduated with the class of 1888. Subsequently he spent several years in Louvain, Gottingen and Heidelberg where, in 1891, he obtained the degree of doctor of philosophy. Dr. Zinser has been elected president of Sharp & Dohme.

John A. Gerlach, Baltimore, Md., presented a Prescription Balance to the Museum of the American Institute of Pharmacy.

We congratulate Mr. and Mrs. Lyman W. Griffin upon the completion of a half-century of life together. Lyman Griffin started in the drug business in 1874, entering the Massachusetts College of Pharmacy in 1879 and graduating in 1882, He was made a life member of his alma mater, served as its secretary for twenty-five years and is now a vice-president of the college. After more than sixty years in retail pharmacy, he is now actively engaged in the management of The J. G. Godding store in Boston. He has given generously of his time and effort to pharmaceutical organizations; he is a member of the AMERICAN PHARMACEUTICAL ASSOCIATION, and for many years has been treasurer of both the Massachusetts State Pharmaceutical Association and the Boston Association of Retail Druggists.

Dr. Frank Lee Pyman is to receive the Hanbury Medal for 1936.

SEVENTH AMERICAN SCIENTIFIC CONGRESS.

The Seventh American Scientific Congress will be held in Mexico City, Mexico, Septem-

ber 8th to 17th. The president of the organization is Pedro C Sanchez. Besides the scientific program, interesting entertainment events have been arranged for; our fellow-member **G. G. Colin** desires to have publicity given of the meeting.

THE AMERICAN RED CROSS.

Membership in the Red Cross offers the way to help those who have become victims of natural disasters, such as floods, fires, earthquakes, etc. Each year the Red Cross answers nearly one hundred such calls for aid. There are bureaus of 3700 chapters and 9000 branches located in the states and the service is given from these central points.

TRI-STATE PHARMACEUTICAL CONVENTION.

The Tri-State Convention of Idaho, Washington and Oregon, at the same time and place, with that of the AMERICAN PHARMACEUTICAL ASSOCIATION, was eminently successful. The work of F. C. Felter was given much credit for carrying the program into effect.

DRUG LAW REVISION POSTPONED TO 1936.

There will be no action on the food and drug bill until Congress reconvenes in January, it was declared by Representative Virgil Chapman of Kentucky, *Chairman* of the sub-committee of the House Interstate Commerce Committee which conducted hearings on the measure.

OBITUARY.

P. E. HOMMELL.

Dr. Philemon E. Hommell, Jersey City, N. J., member of the AMERICAN PHARMACEUTICAL ASSOCIATION, one of the founders and first dean of the New Jersey College of Pharmacy, Newark, died August 21st, aged 72 years. He was graduated by the New York College of Pharmacy and the Bellevue College Medical Hospital and maintained a private medical practice in addition to his college post. Dr. Hommell served for many years as professor of materia medica and toxicology at the New Jersey college and at the time of his death was *dean emeritus* of the institution. He was a former president of the New Jersey Pharmaceutical Association and was a delegate to the United States Pharmacopœial Convention, 1900–1920.

HENRI GOLAZ.

Dr. Henri Golaz, professor of Galenical Pharmacy, Lausanne University, and chief pharmacist, County Hospital, Lausanne, died June 30th, aged 75 years. He was educated at Vevay, and on completion of his studies he went into business in Sainte Croix, returning to Vevay after several years to take over the Pharmacie des Crois Couronnes, the oldest pharmacy in the district. In 1925 he was awarded the degree of Sc.D. *honoris causa* by Lausanne University; he was among those who received the members from the different countries on the occasion of the 1924 International Pharmacy Congress held in Lausanne. He was chairman of the Committee for the Unification and Standardization of Preparations of Poisonous Drugs, and member of the Revision Committee of the Swiss Pharmacopœia.

DR. HERMANN EMDE.

Dr. Gottfried Wanruk, Koenigsberg, Pr., Besselstrasse 5, Germany, advises that Doctor of Philosophy, Hermann Emde, director of the Pharmaceutic Chemical Institute of the Albertus University, Koenigsberg, Pr., Besselstrasse 5, Germany, died in Thun, Switzerland, on a visit for the restoration of his health, following an operation. The deceased was Professor of Pharmaceutical and Food Chemistry.

ARTHUR DEHON LITTLE.

Arthur Dehon Little, aged 71 years, chairman of the board and founder of Arthur D. Little, Inc., a *past-president* of the American Chemical Society, and a member of the Advisory Board of Industrial and Engineering Chemistry, died suddenly August 1, 1935, at the Rock End Hotel, Northeast Harbor, Maine, where he had gone to spend the summer with Mrs. Little. Upon arrival at the hotel on July 28th, Dr. Little seemed completely exhausted as the result of a cold. The following day pneumonia developed. Dr. Little was born in Boston, Mass., on December 15, 1863. He was a member of the class of 1885 of Massachusetts Institute of Technology.

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WEST VIRGINIA STATE PHARMACEUTICAL ASSOCIATION.

R. L. Swain was among the speakers at the West Virginia Pharmaceutical Association on the present conditions of the druggists and the problems which face them in the future. He explained the Fair Trade Bill as passed by the Maryland Legislature and the steps which have been taken in other states to put the measure into operation.

The following were nominated for officers, election to be held by mail ballot, for 1936–1937: *President*, Rodney A. Barb, Parsons; E. O. Wiseman, Fayetteville; *First Vice-President*, James A. Patterson, Martinsburg; Paul Poundstone, Buckhannon; *Second Vice-President*, J. Edgar Johnson, Charleston; W. S. Coleman, Lewisburg; *Third Vice-President*, Fred A. McFarlin, Clarksburg; Charles E. Tuttle, Parkersburg; *Secretary-Treasurer*, J. Lester Hayman, Morgantown; Roy B. Cook, Charleston; *Member of Council*, J. Charles Hall, Charleston; Fred C. Allen, Marlinton.

The fifth annual veterans' luncheon with an excess of fifty veterans in attendance was a feature of the Convention. Several of the charter members were present.

W. Bruce Philip, secretary of the District of Columbia Pharmaceutical Association, was a feature speaker, stressing the necessity of co-operation and pointing out the value of belonging to the state and national pharmaceutical associations.

The following officers were installed to serve during the year: *President*, Robert R. Pierce, Morgantown; *First Vice-President*, John A. Greear, Huntington; *Second Vice-President*, Jas. A. Patterson, Martinsburg; *Third Vice-President*, H. A. Goodykoontz, Bluefield; *Secretary-Treasurer*, J. Lester Hayman, Morgantown; *Member of Council*, Chas. V. Selby, Clarksburg.

CANADIAN PHARMACEUTICAL ASSOCIATION.

The education of the apprentice, dealt with by Professor A. W. Matthews of the School of Pharmacy, University of Alberta, Edmonton, drew a good deal of cross fire and debate at the Canadian Pharmaceutical Association. Out of this, it is believed, there will be some plan evolved in every province of the Dominion to take the education of the apprentice out of the "hit and miss" class and give it some definite trend.

The newly elected officers of Canadian Pharmaceutical Association are: *Honorary Presidents:* Miss Agnes Short, Saint John, N. B.; H. S. Tapscott, Brantford, Ont.; E. A. Jolly, Regina, Sask.; J. H. Best, North Battleford, Sask.; J. F. Scott, Cranbrook, B. C.; Rod. Dagenais, Montreal, Que., *President*, S. R. Balcom, Halifax, N. S.; *Vice-President*, H. M. Corbett, Creemore, Ont.

At a meeting of the Council A. J. Wilkinson was elected *Chairman;* Dr. B. J. Stanbury, *Secretary-Treasurer;* both are reëlections. The 1936 meeting of the Canadian Pharmaceutical Association will be held at Saskatoon.

NEW NRA BODY TO SURVEY FAIR TRADE ACTIVITY.

Under supervision of Mark Merrell, formerly assistant deputy administrator in charge of the retail drug and other distribution codes for the old NRA, a newly created Loss Limitation unit of the NRA has started a comprehensive study of retail price control and of loss leader merchandising.

Work on the price control study must be completed before next April when the new NRA expires; every effort is to be made to have it business-like and thorough. At present a staff of fourteen persons is engaged in the study, including statistical and legal experts formerly engaged in other NRA work.

THE PATMAN BILL.

Shortness of time has stopped any action by the House Judiciary Committee on the Patman bill or some substitute for it. Although hearings were concluded, members of the committee did not have time to act on the complicated problems involved in an attempt to eliminate price discrimination. Chairman Hatton W. Sumners has appointed a subcommittee to study the bill and others of a similar nature and to make a report during the next Congress to the full committee.

PAREGORIC RULING.

The Food and Drug administration has ruled that paregoric labels must bear a warning that it is a dangerous preparation, particularly for children.

FAIR TRADE LEGISLATION.

Secretary **Robert L. Swain,** of Baltimore, of the Maryland Board of Pharmacy, will head the committee on federal and state fair trade legislation of the National Association of Retail Druggists. The committee will endeavor to assist states in securing passage of fair trade legislation, and will support efforts toward the enactment of a national fair trade law.

In addition to Chairman Swain the committee includes: N. S. Gesoalde, New York; Robert P. Fischelis, New Jersey; J. B. Pilchard, Pennsylvania; Otto A. Bjornstad, Iowa; Bernard S. Weinshenker, Illinois; John F. Huber, Wisconsin; Roy A. Perry, Oregon; M. P. Goodner, Washington; and E. F. Kelly, Washington, D. C.

ILLINOIS.

Under a law passed by the Illinois Legislature, druggists, both retail and wholesale, are compelled to grant employees at least twenty-four consecutive hours of rest in addition to the regular period of rest at the close of each working day. Although, generally speaking, the majority of drug stores without the compulsion of law grant employees definite periods of layoff, there are believed to be a small number where, on occasion, employment has been of seven days' duration.

KENTUCKY BOARD.

Failing to work out the budget situation which was brought about when Gov. Ruby Laffoon vetoed a $6500.00 appropriation, the Kentucky Board of Pharmacy has indicated that it probably will take its case to court in a friendly suit to determine its financial status.

MARYLAND REPEAL FAILS.

Baltimore druggists, who joined with other retailers in an effort to have the gross receipt tax declared unconstitutional, met defeat when the Maryland Court of Appeals sustained the law's constitutionality.

PROCEEDINGS N. A. B. P., DISTRICT NO. 2, BOARDS AND COLLEGES OF PHARMACY.

The proceedings of the N. A. B. P., District No. 2, Boards and Colleges of Pharmacy, has been issued in a mimeographed form of 118 pages. The meeting was held March 11–12, 1935.

THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY.

The following officers for 1935–1936 were elected by the American Association of Colleges of Pharmacy: *President,* Robert C. Wilson, Athens, Ga.; *Vice-President,* H. C. Washburn, Boulder, Colo.; *Secretary-Treasurer,* Zada M. Cooper, Iowa City, Iowa; *Chairman of the Executive Committee,* C. B. Jordan, La Fayette, Ind.; *Members of the Executive Committee,* Ernest Little, Newark, N. J.; Rufus A. Lyman, Lincoln, Nebr. *Member of the Syllabus Committee,* H. A. Langenhan, Seattle, Wash.

Officers of the Teachers Conferences are as follows: **Pharmacy,** *Chairman,* E. T. Motley, S. Car.; *Vice-Chairman,* Robert C. Wilson, Athens, Ga.; *Secretary,* C. O. Lee, La Fayette, Ind. **Chemistry,** *Chairman,* Arthur H. Uhl, Madison, Wis.; *Secretary,* Lewis C. Britt, Corvallis, Ore. **Pharmacognosy and Pharmacology,** *Chairman,* Charles E. Mollett, Missoula, Mont.; *Secretary,* R. D. Bienfang, Norman, Okla. **Pharmaceutical Economics,** *Chairman,* John F. McCloskey, New Orleans, La.; *Secretary,* W. Henry Rivard, Providence, R. I.

National Association Boards of Pharmacy.—*President,* W. Mac Childs, Eldorado, Kansas; *Honorary President,* F. H. King, Delphos, Ohio; *Vice-Presidents,* George A. Moulton, New Hampshire; John M. Woodside, Pennsylvania; John Clemmer, Florida; Earl E. Durham, Michigan; R. C. Schultz, Wyoming; John F. Allen, Oregon; *Secretary,* H. C. Christensen, 130 N. Wells St., Chicago, Ill.; *Treasurer,* J. W. Gayle, Frankfort, Ky.

Conference Pharmaceutical Association Secretaries.—*President,* J. W. Slocum, Indianola, Io.; *First Vice-President,* Roy S. Warnack, Los Angeles, Calif.; *Second Vice-President,* Wm. B. Day, Chicago, Ill.; *Secretary-Treasurer,* Carl G. A. Harring, 20 Glen Road, Newton Center, Mass.; *Members of the Executive Committee,* F. V. McCullough, New Albany, Ind.; R. C. Wilson, Athens, Ga.; J. Lester Hayman, Morgantown, W. Va.; Dennis E. Murphy, Cincinnati, Ohio.

National Conference on Pharmaceutical Research.—*Chairman,* E. N. Gathercoal; *Vice-Chairman,* Wm. J. Husa; *Secretary,* John C. Krantz, Jr.; *Treasurer,* Fitzgerald Dunning; *Members of Executive Committee,* H. V. Arny, Francis E. Bibbins and Glenn L. Jenkins.

THE NATIONAL ASSOCIATION OF RETAIL DRUGGISTS MEETS IN CINCINNATI, SEPTEMBER 23rd–27th.

THE DRUG TRADES EXPOSITION.

The Drug Trades Exposition will open its annual exposition October 15th, at the Grand Central Palace, New York City.

PHARMACY WEEK WINDOW DISPLAYS.

Chairman Anton Hogstad, Jr., suggests that it will be found preferable to select one title for a display and build the entire exhibit around this. In a circular issued fifty titles are given for displays and these have been selected as a means of interesting the public and advancing the cause of pharmacy.

THE NATIONAL ASSOCIATION OF INSECTICIDE AND DISINFECTANT MANUFACTURERS.

At the annual convention of the National Association of Insecticide and Disinfectant Manufacturers in Chicago, a committee was appointed to take action on setting standards for household insecticides in an educational campaign.

CHAPTER KAPPA PSI.

The organization of a new graduate chapter of Kappa Psi, national pharmaceutical fraternity, by a group of University of Pittsburgh graduates, was announced at the Pennsylvania Pharmaceutical Association Convention. The following are officers and charter members:

C. E. Rickard, of Dormont, Pa., *Regent;* W. J. Hill, of Pittsburgh, Pa., *Vice-Regent;* E. Reeves, of Avalon, Pa., *Secretary;* H. A. Krumpe, of Gibsonia, Pa., *Treasurer;* J. W. Wible, of Apollo, Pa., *Chaplain;* F. J. Steele, of Pittsburgh, Pa., *Historian;* C. Schaefer, of Pittsburgh, Pa., *Chairman of the By-Laws Committee;* Dr. L. K. Darbaker, of Wilkinsburg, Pa.; R. Taylor, of Greensburg, Pa.; E. Claus, of Pittsburgh, Pa.; G. Young, of McKeesport, Pa.; W. Siegel, of Erie, Pa.; R. Miller of Pittsburgh, Pa.

The officers and the charter members constitute the committee on By-Laws.

PHARMACEUTICAL STANDARDS.

The 1935 revised edition of the "Manual of Pharmaceutical Standards, including Tolerances and Methods of Analysis," is ready for distribution. This compilation, prepared by the Combined Pharmaceutical Contact Committee of the American Drug Manufacturers' Association and the American Pharmaceutical Manufacturers Association, with the coöperation of the Food and Drug Administration, U. S. Department of Agriculture, consists of 17 monographs on Ampuls, 36 monographs on Compressed Tablets and 18 monographs on Hypodermic Tablets. The price of the manual is $3.00. Copies may be obtained from the American Drug Manufacturers' Association, 506 Albee Building, Washington, D. C., or from the American Pharmaceutical Manufacturers Association, 246 High St., Newark, N. J.

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THOMAS H. POTTS.

Thomas H. Potts, former secretary of the National Association of Retail druggists and later a field representative of the organization, died August 12th. Mr. Potts served the N. A. R. D. as secretary for a number of years, terminating this position in 1916. Illness incapacitated him, and for several years he has been in poor health.

DR. BENJAMIN LINCOLN ROBINSON.

Dr. Benjamin Lincoln Robinson, former curator of the Gray Herbarium at Harvard University and Asa Gray Professor Emeritus of Systematic Botany at the university, died July 27th, at his Summer home in Jaffrey, N. H. He was seventy years old. Prof. Robinson, who had served on the Harvard faculty for forty-five years, was an authority on the flora of the United States, Mexico, tropical America and the Galapagos Islands. He was born in Bloomington, Ill.; was graduated from Harvard in 1887 and received a Ph.D. degree from University of Strasbourg two years later.

Prof. Lydia Rabinowitsch-Kempner, famous bacteriologist and associate of Robinson Koch in many of his most important investigations, died in Berlin, August 3rd. She was sixty-four years old. She was graduated from the Universities of Zurich and Berne, and after taking her doctor's degree, joined the Institute for Infectious Diseases at Berlin, where, under the direction of Dr. Koch, discoverer of the tubercle bacilius, she was engaged in researches on the influence of heat on bacteria and pathogenic yeast specimens.